



GARDENING **at the** **SHORE**

The Garden Club of Long Beach Island

Dear Dennis -

May you always
enjoy working with
the Earth. The chapter
on Perennials is special!

Love,

Mom

Christmas, 2004

GARDENING at the SHORE



The Garden Club of Long Beach Island



Foreword

During the last ten years, gardening at the seashore, particularly along the coast of New Jersey, has exploded into a creative and varied adventure. Most property owners are no longer satisfied with a graveled lot and a few Japanese black pines. Homeowners have caught the gardening fever and are hungry to know what to plant, how to plant it and, most of all, how to keep it healthy and growing. By studying and trying methods reported to work under the unique conditions of the barrier island environment, shore gardeners can have successful flower gardens, vegetable gardens, and a wide variety of trees and shrubs.

The essential question a gardener must ask when venturing into the world of plants at the shore is, "How much time do I have and how much effort must I expend to create and maintain a garden or landscape plan?" Since the seashore atmosphere best supports those plants, shrubs and trees that have acclimatized to its conditions, the more of these materials used the less work and the more success.

The subjects chosen for this gardening book have been discussed in numerous books, gardening journals, popular magazines and garden center newsletters. The purpose of this guide is to provide a summary of various writings and to share with readers the ways local gardeners have learned to live with storms, wind, salt and sand. Information applies to gardening in USDA Hardiness Zones 6-7.

History of the Garden Club of Long Beach Island

What was it like on Long Beach Island in 1957? The Island had survived the hurricane of 1944, but the Great Storm of 1962 was not far away. Building was robust and some citizens were concerned about the rapidly disappearing natural growth of plants and trees from the Island. It was in this atmosphere that a small group of women decided to form a garden club whose purpose would be to encourage members to plant trees and shrubs.

On November 10, 1958, The Garden Club of Long Beach Island was organized and sixteen women met in various members' homes on the Island. At their first meeting, this industrious group established a motto, "Watch Us Grow." The club flower, the American Holly and the club emblem, a holly wreath with the motto inside, still symbolize the club today.

During the first two years the membership grew from sixteen to sixty-three. An African Violet Clinic was started, an Arbor Day celebrated, plants for landscaping the Island Library were donated and the first courses in flower arranging were held in July and August.

In 1961 the Club joined the Federated Garden Club and became members of the Garden Club of New Jersey and The National Garden Club, Inc. In August of that year, Edith Duff Gwinn introduced the Pine Seedling Program. Members continue to collect pinecones for propagation and sell shore-hardy seedlings to the public. This program has received

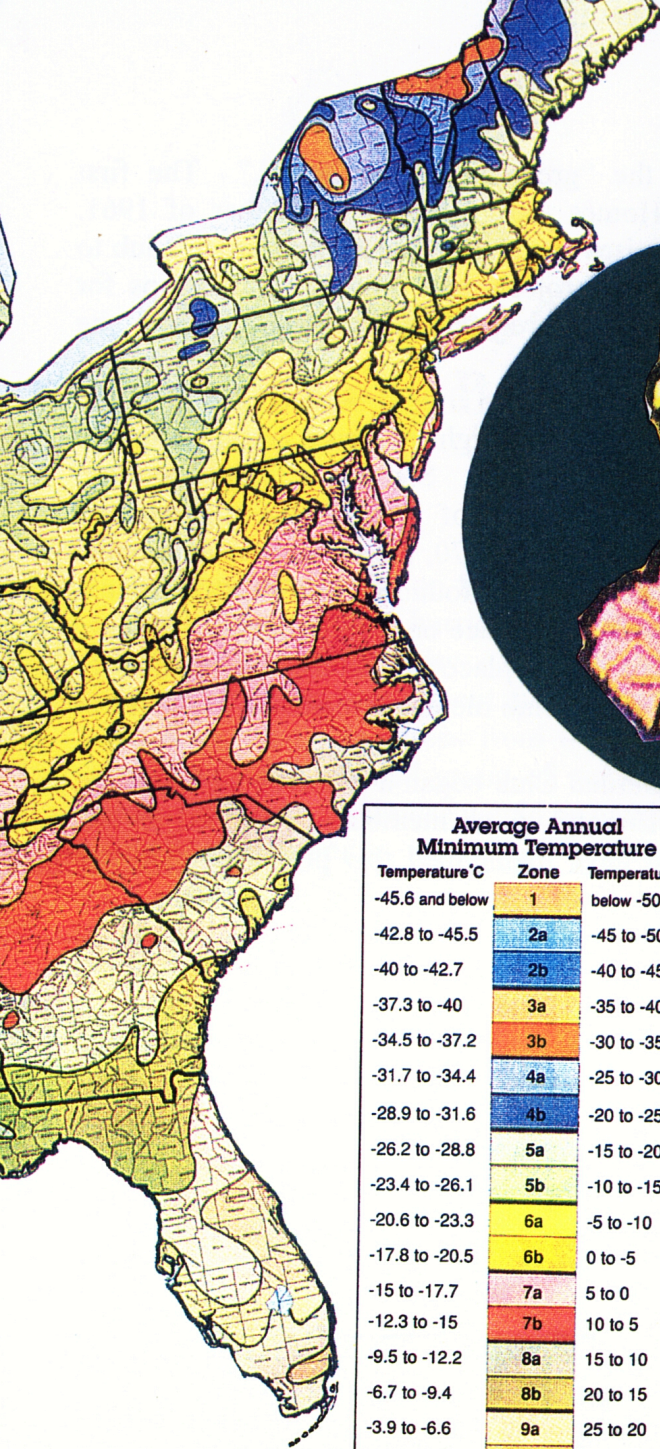
many honors for the “greening of the Island.” The first Holiday Tour of Homes took place in December of 1961. This annual event raises funds that enable the Garden Club to support environmental projects and provide scholarships for students pursuing fields related to horticulture and the environment.

It was in 1968 that Edith Gwinn initiated the idea that the area around the Barnegat Light Museum could become a garden for all residents to enjoy. She had a faithful worker, Frances Selover, and the two of them began digging and planting. Two years later, in 1970, the Garden Club adopted the garden, naming it for its founder, Edith Duff Gwinn. Dedication ceremonies took place on June 22, 1970. Twenty years later, in 1990, a special place was set aside in memory of Frances Selover. Today, Club members maintain this place of beauty for all to enjoy.

In 1996 the Garden Club began a landscaping project at the Beach Haven Library. Club members developed several perennial beds and have maintained this property since that time. Located at Third Street and Beach Avenue, the charming library now offers a display of colorful plantings throughout the seasons.

By 2004, the Garden Club of Long Beach Island had grown to include one hundred ninety-seven active members living on Long Beach Island and in Stafford Township. Within this unique climate, the members continue to further the interest in gardening and kindred subjects and to cooperate with all programs for improvement in planting, landscaping, conservation, environment and beautification.





Average Annual Minimum Temperature

Temperature °C	Zone	Temperature °F
-45.6 and below	1	below -50
-42.8 to -45.5	2a	-45 to -50
-40 to -42.7	2b	-40 to -45
-37.3 to -40	3a	-35 to -40
-34.5 to -37.2	3b	-30 to -35
-31.7 to -34.4	4a	-25 to -30
-28.9 to -31.6	4b	-20 to -25
-26.2 to -28.8	5a	-15 to -20
-23.4 to -26.1	5b	-10 to -15
-20.6 to -23.3	6a	-5 to -10
-17.8 to -20.5	6b	0 to -5
-15 to -17.7	7a	5 to 0
-12.3 to -15	7b	10 to 5
-9.5 to -12.2	8a	15 to 10
-6.7 to -9.4	8b	20 to 15
-3.9 to -6.6	9a	25 to 20
-1.2 to -3.8	9b	30 to 25
1.6 to -1.1	10a	35 to 30
4.4 to 1.7	10b	40 to 35
4.5 and above	11	40 and above

Introduction to Island Gardening

Starting from Scratch

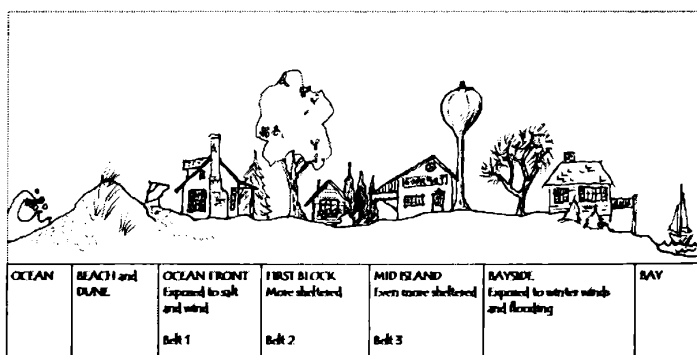
Gardening at the shore is in some ways like gardening anywhere else. With enough time, energy and money pretty much anything can be grown; perhaps not easily and perhaps not in the long term, but it can be grown. On the other hand, almost every locale has a plant or vegetable or tree for which it is well known because the local conditions are conducive to its growth (think Georgia peaches, Idaho potatoes or Jersey tomatoes). So, when gardening at the shore, it helps to think about what grows here naturally. Not much, but think again. What about bayberry and beach grass? What about goldenrod and rugosa rose and prickly pear and beach plum and dusty miller? Not your idea of a garden? Maybe not, but does this list of plants suggest a direction or theme one might keep in mind when thinking about a garden at the seashore? Being realistic is the key.

What likes to grow at the shore? What can be grown here and what conditions can be easily changed to help more things thrive? Are conditions on one side of the house different from the other? Are there spots that receive more sun or are more shaded than others? Is there a natural contour,

fence or line of shrubs that can help contain soil, or are there decks on which containers can be used? Each location is different, but with a little thought and observation, and a little realism, a variety of gardens can be grown and made to thrive.

As a first step toward this realism, be aware that the extremes in seashore conditions can vary greatly in very small increments of distance from the beach, back toward more normal ground or, as is the case on a barrier island, from the beach back to the bay. These changes in microclimates or belts are well described in the following illustration. Examine it carefully as it will be of great help in deciding the kinds of plants that might thrive on a particular property.

Gardening will be more successful in the belts closest to ocean and bay if the garden plan includes native plant materials. Not only is this ecologically sound, it promotes better plant health. Native grasses have always graced the landscape of barrier islands, swaying gracefully with the wind.



Dune grasses such as American beach grass (*Ammophila breviligulata*) and marsh meadow cordgrass (*Spartina spp.*) can survive ocean and bay locations and help anchor the sand with their penetrating roots. Planting native or adapted plants will assure easier gardening with materials that can survive without elaborate preparation or care. These plants pay

dividends, too, by enhancing wildlife habitat for birds and butterflies.

In Belts 2 and 3, many more plants can be grown because they are more protected. Salt is less of a factor, although wind continues to be a problem. Any plant that can grow in Belt 1 can be grown in Belts 2 and 3. Notice that there are no suggestions for bayside plants. Any plants that grow in Belts 1, 2 and 3 are suitable for growing on the bayside.

Gardeners at the shore have found five considerations most critical in deciding where and what to plant: soil, wind, sun, water and salt spray. Soil, of course, is an obvious concern across the exposure belts described above. Soil will be well discussed under "Island Basics." Be aware that good soil must be developed if plants are to be started and grown.

Wind is perhaps the most difficult element in the list with which to cope. It can come from almost any direction, often violently, often unexpectedly, and often carrying salt spray with it. Not only can it physically blow plants and trees over, it can strip them of leaves in minutes and so desiccate a plant that it will never recover.

In most cases sun is a good thing, but at the seashore, particularly augmented by reflections from sand and water, it can easily become too much of a good thing. Water, on the other hand, is often in short supply during the hot summer months, and what there is and what is added disappear all too quickly because sandy soil is so porous. A controllable source of supplementary water is a necessity.

Water of the salt variety is a different story and is of particular concern in the garden belts close to ocean and bay. Generally, if the wind is strong enough to carry salt spray it is also strong enough to shred leaves; the combination can be very damaging.

So, where to begin? While the hope might be to have a beautiful English garden for cut flowers, the back side of a sand dune is not likely to be the best place to do it. But if

there is a strip of land well back from the beach between one house and the one next to it, and perhaps a fence to the south and west, it is possible.

At the beginning move carefully, look and watch! Determine nature's effects on the property by first studying the open spaces. Take careful notes regarding the maritime conditions at different times of the day, and remember that the sun will be higher in the sky in summer. Most plants grow better when they are given some protection from wind and intense sun, and so a garden or landscape plan must encompass these factors. Wind direction is generally south to southwest during the summer months and northwest to northeast during the winter; therefore, a constructed windbreak such as a fence, the natural shelter of trees and shrubs, or protection in the lee of a house or garage becomes very important. These buffer zones are vital and must be considered in any garden layout. Attractive protection planted to windward of more tender plants might include the following trees and shrubs: Evergreens: Japanese black pine, eastern red cedar, Pfitzer juniper, inkberry and American holly. Deciduous: beach plum, black cherry, common wax myrtle, tamarisk, Rosa rugosa, Russian olive, autumn olive, Viburnum spp., bayberry and Clethra spp.

In planning a garden site, consider the island's intense sunlight, which increases dramatically when it reflects off the water and sand. Such intensity burns leaves and tender plant tissues, so plant beds of more fragile plants in the shade patterns of buildings and taller plantings. A sensible plan includes plants whose leaves are protected by grayish fuzz or have a leathery surface, such as Artemesia spp., Ilex spp. and Viburnum spp.

Because barrier islands come with porous and rapidly draining, sandy soil, a controlled water supply is an essential element in garden design. Drip irrigation is an economical and efficient solution and well within the capabilities of most gardeners to design, install and maintain. A catalog from

Dripworks (800-522-3747 or www.dripworks.com) has all the information and is a source of inexpensive parts.

It is important to know that Long Beach Island lies in the U.S. Department of Agriculture Zone 6-7. This means that temperatures are not likely to slide below -10-degrees Fahrenheit. The hardiness zone for the selected plants must match the hardiness zone of the location.

A shore gardener has many layout options after the natural conditions of the habitat and ecology are understood. Flowers and vegetables can be established in the ground or in raised beds above the ground. They can be grown in pots or containers, making them easy to transport from one spot to another, depending on wind and sun. Trees and shrubs can be placed to set off border beds of herbaceous plants or to obscure a less attractive service area. Once the brakes are put on hostile elements, the gardener can consider the functions each area will serve. When enough protection exists, it is time to design outside living rooms and select the plants. Artistic design rules governing form (size and shape), composition (color, texture, pattern and contrast) and style (focal points, architecture and mood) come into play. Masses of the same plants have more impact than individual specimens scattered about. Opposites on the color wheel create drama and excitement, while various shades of the same color, especially blues, purples and pinks, are cool, soothing and add depth.

Gardens of all kinds are possible at the shore, but the space will probably tell the gardener what it wants to be. The first phase of a plot layout must consider measures to protect the seashore ecology as well as measures to ease the impact of harsh winds, salt and sun. Design what will be pleasing in a habitat of blue sky, sea, sun and sand. If a beautiful view asks to be emphasized, plants can frame that view. Use the chapters of this book to learn about the selection, placement, planting and care of suitable shrubs, trees, perennials, annuals, grasses and bulbs.



Island Basics

Handling the Elements

To learn about gardening at the shore, study the basic elements: sand, soil, salt, water and wind. Discover ways to make these elements work to create a beautiful garden.

Know the Soil

Soil nutrition at the shore means “from sand to riches with amendments.” Good garden soil is made up of air, inorganic and organic matter as well as assorted bacteria, fungi and other microscopic creatures, which work together to determine the success or failure of the garden. Successes or failures can be traced directly to the fertility or infertility of the soil in which the plants are grown. The basic rule, “Feed the soil and it will feed the plants,” applies more to shore gardening than elsewhere. Texture, moisture-holding capacity, fertility and general make-up are of prime importance.

There are two types of sandy soil: coarse acidic sand found inland and finer, alkaline sand mainly found on the coast. Although rich in lime, this coastal sand is basically

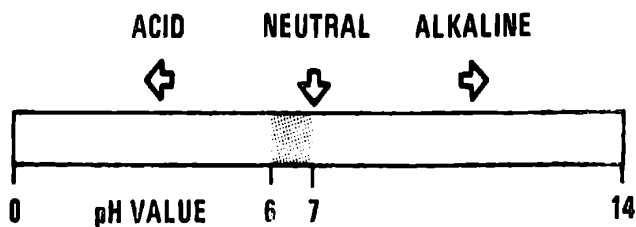
infertile, lacking nutrients and poor in humus. In its natural state, sandy soil does not allow for varied gardening because it cannot hold food particles or moisture well.

Air is needed for root formation and soil drainage; water carries dissolved nutrients into the plant's root system and organic and inorganic matter provide food. Plants obtain most of their nutrients directly from the soil and get the necessary oxygen, hydrogen and carbon dioxide from the air and water.

Amendments of good topsoil, compost, or granular seaweed are essential for gardening success. Sand is easily tilled and holds air and warmth, allowing earlier seed sowing, but can easily burn and scorch plants in drought. Be sure to select plants that are healthy, adapted to the shore environment and are drought, disease and pest resistant.

Soil Testing

Soil testing takes some of the guesswork out of gardening and is an ideal way to determine what is going on in garden plots. It also indicates what corrective measures to take. Soils should be tested for pH levels, a system that determines the degree of acidity or alkalinity in the soil. Tests can be performed by soil analysts from the local university extension service or by purchasing a home test kit from a garden supply center. Testing can be done anytime, but the preferred time is spring and late fall before the ground freezes.



pH affects the availability of nutrients in the soil to the plant. Measurements run from 0 to 14. Most garden plants thrive when the pH is 6 to 7. A neutral soil is pH 7. Higher than pH 7 and the soil is alkaline or “sweet.” A reading lower than pH 7 and the soil is acidic or “sour.” Lime is used to neutralize soil that is too acidic: a reading lower than pH 5.5. Sulphur is applied when the soil is too alkaline at pH 7.2 or higher. If corrective measures are necessary, follow the directions on the proper product to reach the desired pH of 6 to 7. When taking soil samples, use clean, dry equipment. Take samples from different areas of a hole: top, middle and bottom. Don’t mix soil samples from areas with different growing conditions. Test the poor growth areas when relatively dry. Combine together all soil from similar samples in a clean, non-metallic container and mix thoroughly. Take a small portion of the mixed sample and place in a small collection container for testing.

Salt and Wind

Gardening at the seashore can be problematic and challenging with the wind, salt spray, salt water, tidal flooding and a hot scorching sun playing havoc on a gardener’s best efforts. The wind and sun cause rapid water evaporation, drying out plants and distorting and damaging their normal growth. Windbreaks and screenings are an essential protection against these elements. A barrier of shrubs, trees and ground covers planted thickly provides natural obstacles to break these forces.

Too much salt spray retards normal growth and prevents some plants from absorbing nitrogen and other nutrients. Certain plants like turnips, beets, celery, sea kale and asparagus actually like small amounts of salt, which accumulate in the sap of the plant cells, causing them to absorb large amounts of water. Salt water is a good, natural way to control worms found on cabbage

Water

Sufficient water is a key element for proper plant growth. Avoid gardening in areas of possible flooding from tidal waters. Although occasional salt water flooding can deliver beneficial minerals to the soil, fresh water flushing should be done to remove salt-water invasion of the soil. Installing an automatic, drip watering system or using a soaker hose will add the needed moisture to promote good plant growth. Adding topsoil, mushroom soil, compost, seaweed products and mulch is a good way to amend sandy soil and retain moisture. Seaweed and eelgrass, the best of the mulches, are readily available at the shore. Collect them along the beaches at the ocean and bay, and especially at boat ramps. Seaweed is particularly rich in micronutrients like copper, zinc, boron and manganese and also contains hormones that stimulate plant growth. Look for seaweed extracts and granular products at garden supply stores. Other mulches to consider are salt hay, straw, strips of paper and sawdust.

Compost - Food for the Soil

Composting, a biological decomposition of organic wastes, is one of the ways in which we can give back to the earth. Create a useful soil amendment by recycling kitchen (vegetables only) and yard wastes.

All plants by nature are designed to survive on their own decaying leftovers. Whatever their leaves extract from the air and their roots from the soil in one year becomes food for the next year. Bacteria in the soil process these leaves and roots into compost. Such is the way of nature.

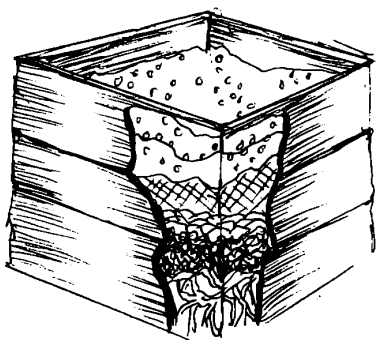
Raw materials for composting include leaves, pine needles, twigs, grass, and vegetable wastes from the garden. Kitchen wastes such as vegetable and fruit scraps, coffee grounds, and eggshells plus non-woody plant trimmings may also be added to the compost pile. Some "raw"

(uncomposted) organic materials such as grass, weeds and green garden plant waste contain large amounts of nitrogen. Others, such as dead leaves and small twigs contain much less nitrogen and a higher proportion of carbon. Raw materials with high nitrogen (green) should be combined with those containing a higher proportion of carbon (brown). The result will be better compost.

Large amounts of seed-laden weeds, diseased plants, or plants treated with pesticides should **not** be added to the compost pile if it is to be used in the garden. Although high temperatures generated in compost inhibit the breeding of insects in the compost pile, not all insects and weeds are eliminated.

Composting could be as simple as burying scraps in the garden or as complex as building cages of wire and lumber. For most gardeners here, a drum with air holes will work just fine. In a sense a compost pile is another form of a raised bed, and plants can be grown right on top of the compost. For the compost pile choose a partly sunny area, protected from drying winds, with good drainage, and near a water spigot, if possible. It should not be less than three feet by three feet, or it may not maintain the high temperatures necessary for rapid decomposition.

The compost pile should be built in layers to ensure the proper mixing of nitrogen-rich and carbon-rich materials. Successive layers, each three- to four-inches deep, of different types of materials should be used. Water should be applied between each completed set of layers to achieve the proper moisture content. The material should be wet, but not so



wet that water can be squeezed out by hand.

The compost pile should be periodically mixed to incorporate oxygen, which is required for enabling the compost to reach high enough temperatures to kill seeds, insect larvae and disease-causing organisms. Turn the pile immediately if offensive odors due to lack of oxygen are detected. The center of the pile should be hot within a few weeks after the pile is started. Heating indicates that the material is composting properly. The composting is complete when the end result is a humus-like material, dark and crumbly in texture, fairly dry with a pleasant earthy odor. The time required could be anywhere from two to three months depending on the size of the particles. The finished compost is a practically neutral pH and will be about forty percent less in volume than the original pile. This food for the soil is ready for use as a soil amendment, mulch or potting mix.

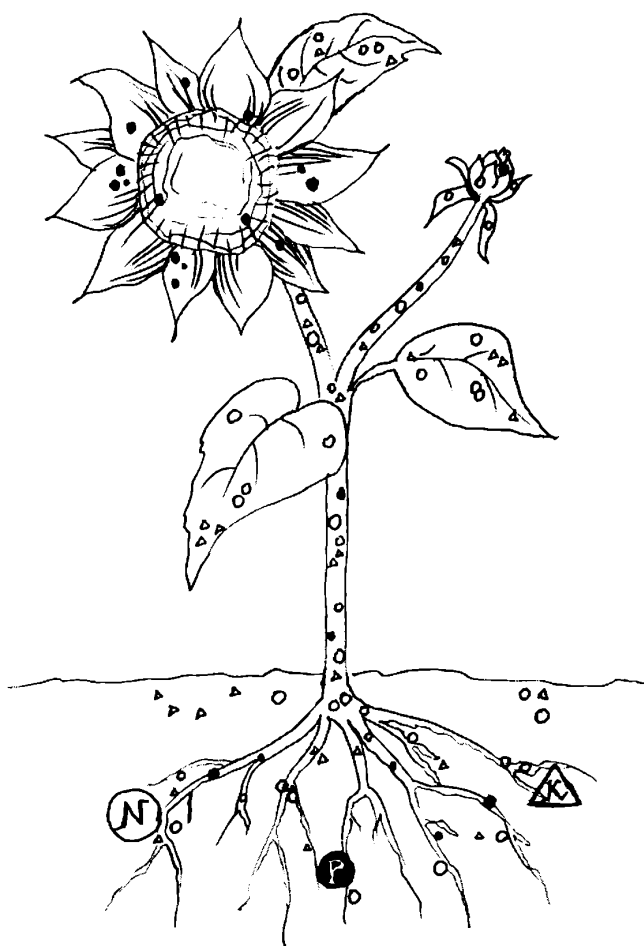
Fertilizers

The gardener should be concerned with creating a good environment for plant life. A well-prepared soil is full of nutrients.

Fertilizers come in either water-soluble (quick release) or water-insoluble (slow-release) types. The slow release types provide a continuous supply of nutrients over a period of time.

Chemical fertilizers are salts mixed with inert ingredients that are readily absorbed by plant root systems. Before applying chemicals and amendments to the soil, a soil analysis test should be done to determine the major nutrient levels in the soil and what corrective steps to take. Whenever using chemical fertilizers, always read the label and follow the directions on the package for proper application and personal safety. These are not the fertilizers of choice because they tend to appear in run-off water, and large doses of nitrogen pollute the bay and ocean.

NPK or “Nitrogen,” “Phosphorus,” and “Potassium” (Potash) are the backbone of all fertilizers, either man-made or organic. A 5-10-5 ratio on the fertilizer package indicates five parts nitrogen, ten parts phosphorus, and five parts potassium.



Nitrogen is an element that is essential for foliage production in flowering plants, vegetables, fruits, and grasses. Plants derive their energy from phosphorus, which stimulates root growth, hastening the maturity of plants and the production of fruits and flowers. Potassium aids plants in utilizing sugars needed for plant vigor and firm stem growth enabling the plant to tolerate changing weather conditions and resistance against diseases.

The most common type of organic fertilizer used comes from the waste of animals. Manure is good for moisture and nutrient retention but should be composted thoroughly before use. Bird manure from pigeons and chickens (1.5-1-1) is the premium of manures. Horse (.7-.3-.5) and cow (.7-.3-.7) manure are rich in humus and contain lots of fibrous material. Sheep and goat manure consist of pellet material and handles and spreads easily. Rabbit manure offers the same advantages and is high in nitrogen. More than seventy-five percent of the plant nutrients fed to an animal pass through it, and into its manure. If spreading fresh (hot) manure, spread in the fall when plants are dormant. Manure is the ultimate slow-release fertilizer, but stick to that from herbivores only.

Don't apply any fertilizer late in the growing season because it can stimulate tender growth that will be damaged by cold weather.

A green leaf indicates a healthy level of chlorophyll, a substance necessary for photosynthesis. Pale green or yellowing leaves and stems could indicate plant stress or that chlorophyll has broken down. It might also indicate a lack of acidity in the soil. The use of aluminum sulfate will increase soil acidity. Pale leaves on a plant can be a result of deficiency in certain elements like nitrogen, magnesium, iron, sulfur or manganese, as well as poor soil or the presence of toxins.

The following is a recipe for preparing organic fertilizer. In early spring, mix together a forty-pound bag of potting mix with one cup of dolomite limestone. Allow this mixture to mellow in a covered container until outdoor planting time. At

planting time, add two cups of the following mixture to the mellowed soil: four cups of soy meal, two cups of blood meal (nitrogen), three cups of bone meal (phosphorus), two cups of kelp meal, and four cups of green sand (potassium). Mix thoroughly and use mixture in holes when setting out transplants.





Seeds and Planting

Getting a Head Start

A seed is a potential plant, waiting to be born, with a gardener's help. A seed is an embryo! The variety available at garden centers and through catalogs is overwhelming! It is hard to fathom how a small oval-shaped, light-colored seed can, in a matter of several months, produce a plump, red, juicy tomato, or how a seed smaller than the head of a pin can grow into a fluffy, pink poppy. Best not to fathom; just accept with delight the wonderful seed choices available to novice and longtime gardener alike.

Some seeds seem to take off on their own by just being scattered on the soil while other seeds require more supervision and special treatment. In regions where the weather is cold a good part of the year, the seeds of many plants survive by going into a deep winter's sleep. During this period their seed coats soften until spring's warmth and rain explode them into growth. This process, a kind of hibernation, is called "stratification." Some seeds can be "tricked" to skip their winter sleep. To accomplish this, the gardener pre-soaks the seeds and then puts them in a zip-top

sandwich bag filled with a moist starting medium such as sphagnum moss or a soilless mix. The next step is to place the bag in a corner of the refrigerator at 34 to 41 degrees. After roots begin to sprout, the gardener may plant the seeds in pots or outdoors if the weather is suitable.

Other types of seeds need an extended dry period for germination to occur, while desert plants require a period of rain or soaking before the seed coat opens. Scratching or nicking the seed with a knife or sandpaper (scarification) gives a boost to germination. Scarification allows water to penetrate the seed coat in a shorter time. Some authorities suggest pre-soaking all but the tiniest of seeds for twenty-four hours prior to planting them. Once the seeds have plumped up, they must go into moist soil. Mistakes can be avoided by carefully reading the planting instructions on the back of the seed packets.

Starting plants from seed is gratifying and a good way to get an early gardening start. Some annual flower and vegetable seeds produce best if started indoors six weeks before the last frost date, around May 20 in this area. Perennials and biennials can be started outdoors during the spring because most of them do not bloom until the second year. Although both flower and vegetable seeds can be planted directly in the garden, many gardeners start tomatoes, eggplant, broccoli, peppers, lettuce, herbs, as well as cosmos, delphinium, poppies and zinnias indoors for a head start, roughly six weeks before the last frost. A strong, cold wind can also be a deterrent to planting outdoors too early.

Starting from Seed

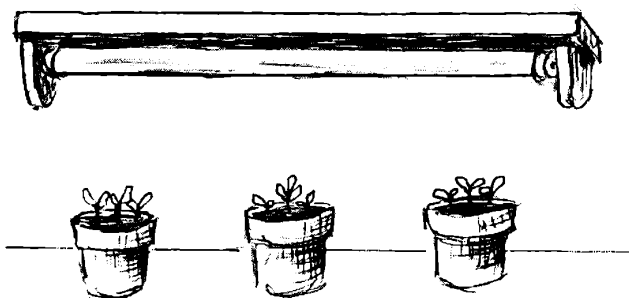
The process for starting seeds indoors requires a few simple materials. The growing medium is most important. Ordinary soil should not be used. A soilless, seed-starting mix that provides aeration, drainage and water retention suits seed germination and the first transplant. Wetting the planting

medium with a quart of water mixed with one tablespoon of baby shampoo while the material is still in the bag makes filling the containers less messy. Press the seeds lightly into the soil about one inch apart and then cover with a shallow layer of moistened, milled sphagnum moss which inhibits "damping off."

Baby seedlings are fragile and vulnerable to a fungal disease called "damping off." Containers must be clean and sterilized in a solution of one part bleach to ten parts water, then rinsed well. Fertilizer is not necessary until seedlings have a second set of leaves. Seeds actually come equipped with their own food supply that gets them through germination.

Helpful Tools

Other helpful tools to use when planting in flats are tweezers, pencil and paper (for labeling), and a spray bottle to moisten the surface. One suggestion that will make working with tiny seeds easier is to mix them with sand and then



sprinkle the sand over the soil. Cover the planted containers with plastic lids or plastic film and place in a warm area. Zippered sweater and blanket bags make a simple home nursery for seeds. The bottom of the bag can be reinforced with cardboard, sturdy plastic or thin plywood cut to shape,

and the back corners of the bag can be propped up with two wooden dowels. During germination dampen the soil by misting or sprinkling. Pouring water directly on the seeds could dislodge them. Most seeds will germinate at 70- to 75-degrees in about five to fourteen days. After seedlings emerge remove the covers and place the containers in as sunny a location as possible. "Grow Lights" are useful at this stage. When the second set of true leaves appears, fertilizing begins. A one-quarter strength liquid fertilizer will do the job. A healthy root system requires phosphorus, which is the middle element (P) in the fertilizer formula NPK. Shortly after the first fertilizing, sturdy seedlings can be transplanted to larger pots. When transplanting, hold the seedling by the leaves, never hold it by the tender stem and keep as much mix as possible on the roots. Young seedlings need tender care: they require good air circulation, careful watering, plenty of light and temperatures ranging from 60- to 70- degrees. Rotating them daily so they grow straight is a wise practice.

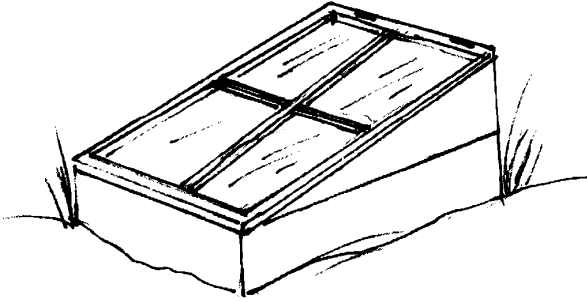
Transplanting

When the seedlings reach the "two-leaf" stage, they may be transplanted into flats or small, individual pots that drain well. The containers must have drainage holes. If there are no drainage holes, punch holes in the bottoms with a sharp nail. Place a drip tray under the flat or containers to catch excess moisture. Other simple containers to use for the two-leaf seedlings are: cut-off milk cartons, egg cartons, egg shell halves, plastic meat trays and water trays sold at wallpaper stores. Miniature plastic greenhouses with clear plastic domes and cells for planting are available through gardening supply

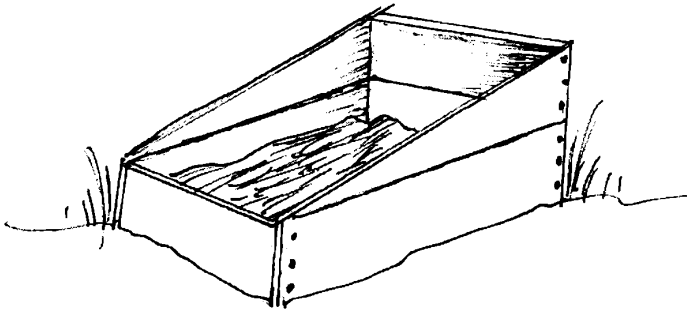
Hardening Off

"Hardening off" time comes when the seedlings are from four- to five-inches high. This simply means that it is time for the

new plants to get some exposure to outdoor living. Cold frames are useful for this purpose. A protected area away from wind and direct sunlight can provide a good spot for the "hardening off" process. The seedling flats and containers



should be brought back into the house at night, especially if the night temperatures go below 36 degrees. Gradually, three to four hours of morning or late afternoon sun can be tolerated after a week or two of "hardening off." When the seedlings have a full head of leaves and abundant roots, they are ready to be set out in the garden, providing there is no more danger of frost. It is preferable to transplant on a cloudy, windless day.



Moving to the Flower Bed

The expedient gardener will have prepared the garden beds ahead of time, having loosened and amended the soil and given thought to design. Flower gardens are much more attractive and showy if flowers are planted in groups of the same kind rather than lined up in a row like vegetables. A good idea is to use a root dip before putting each seedling in its hole. There are a number of products that can be used such as "PHC" obtainable from Gardeners' Supply Company. Plant each seedling slightly deeper than it was in the flat. A bushier plant will thrive if the top of the seedling is pinched off. Surround the seedling with a collar to prevent damage from pesky cutworms. Empty toilet paper rolls are good for this. Seedlings will require lots of water for the next five days. Some gardeners are of a mind to plant several seedlings per hole. The weakest are later snipped off, leaving the strongest to grow.

Soil in a barrier island garden needs ongoing care. Regular feeding with organic fertilizers is vital since the sand acts like a sieve in draining away nutrients.

Some Other Ideas

Conventional gardens are not the only way to plant flowers. Plants can simply be poked through holes in a bag of potting soil and the bag, if kept watered, will provide a colorful spot anywhere the gardener wishes. Another idea, gleaned from Marilyn Schmidt's book, *Gardening on the Eastern Seashore*, is using the hay bale method. A bale of ordinary inland hay (not salt hay) is soaked thoroughly to start the decomposition process. Holes are then punched in the bales and filled with a mixture of organic fertilizer and good garden soil before plants are inserted. Decomposition draws heavily on the nitrogen supply so a nitrogen-rich fertilizer such as blood meal will provide what is needed. Hay bales

can also be buried in sand and covered with topsoil. Contrary to public opinion, it is all right to continue planting throughout the summer months as long as the new plants are adequately watered.

Recently purchased, leftover seed will keep easily for the next growing season. The exceptions are onions, parsley and lettuces. Seeds do not save well if the storage place is hot or humid. A sealed jar or a freezer-weight plastic, zip-lock bag makes an ideal storage container that can be then be kept in the refrigerator.

If the gardener is a student of the seed packet education and seed catalog data, success in growing plants from seeds is assured.





Container Gardening

Planting in Any Place

In recent years, container gardening has become an important part of horticulture. Many gardeners have problems of insufficient sun, too much wind and lack of space. The many variations of containers and their easy movement provide solutions to such problems and allow limitless possibilities for the decorative use of even small outdoor spaces. Strategic placement of containers around an existing garden creates ever-changing effects and overall balance throughout the season. Any space can be transformed into a beautiful garden with the bursts of color that creative containers offer. People with little time can have a garden in almost any location.

Types of Containers

When making the choice of material for the container, keep in mind the weather conditions (sun, wind and salt spray), the ability to keep it watered, and the ease of moving the planter from one area to another. Container gardening

should be an easy way to provide beauty in life. .

No longer are clay pots the only kind of containers available to gardeners. Choose the container that has eye appeal and will function well. Containers made of clay have been used over the years because they are attractive, have a natural look and are quite sturdy. However, these pots must be taken in during the winter months as the cold and freezing weather will crack and flake the clay. Fertilizer salts and algae tend to build up gradually and can be difficult to remove. Daily watering of plants in a clay pot is necessary due to the porous quality of clay; however, a plastic liner can be inserted to help with the water problem. Be sure to soak an unglazed clay pot in water to eliminate the pot from sapping the water from the soil. Glazed pots tend to retain water better than unglazed ones.

Pots can be made of concrete, reconstituted stone, or a mix of concrete, sand and peat moss, which can be made by the gardener. These materials are more porous than clay. Always consider how porous the material, particularly at the shore. The hot sun and wind can have a drying effect on the soil.

Plastic containers, while not always attractive, have a number of benefits. A plastic pot is usually a lightweight container, which has the advantage of easy mobility. Water and air do not pass through plastic containers quickly; therefore, less watering is required and there is little accumulation of salts from fertilizer.

Wood, fiberglass, metal and peat are other types of containers that should be considered along with unusual materials such as old sinks, bathtubs, and garbage cans (for growing potatoes), barrels, rowboats and even bales of hay. Keep an eye out for anything unusual that will add a visual treat to the garden.

Design

The elements of design in the art world are employed in the gardening world as well. Color, texture, proportion, shape, theme are all elements to think about when choosing plants for a container. It is important to pre-determine the visual effects desired.

Color is usually the first element to come to mind when starting to plant a garden. Remember that plant material used in a container provides room for experimentation as it is usually used for one season only and sometimes may be changed in mid-season. So try different colors combined or singly.

A monochromatic scheme can be as beautiful as any combination of colors. Grays interspersed among color emphasize the colors used. Whites added to a selection of pink, mauve and rose plants enhance the entire effect. Use color to draw the eye toward several parts of the yard. Always try to use plants with similar habits together.

Texture is equal in importance to color. Select plants for a container that have contrasting textures. Salvia with soft gray foliage contrasts well with spikey Dracaena. A broad leaf plant could be used with a fern. Ornamental grasses and elephant ears add a dramatic touch to a container.

A garden theme gives direction to planning. For instance, a Victorian house would use geraniums and ornamental grasses. A cottage might have bright annual flowers in window boxes. Containers on the decks of a shore home might have Verbena, Spirea and petunias. Do not forget to plan an herb garden in containers, being careful to plant compatible herbs together in one section within a large container or keep them in separate pots so each herb can be treated according to its needs.

Proportion or size should be considered to give variation and eye appeal within the container. Using a combination of small to large flowers and/or leaves makes the eye of the

beholder dance around and through the arrangement. It is important to have differing heights such as that of Dracaena used with geraniums and petunias. Canna lilies add height and when combined with Coleus and Impatiens produce a wonderful texture and proportion. Just be careful to fill out the middle and bottom section so that the tallest plant does not overpower the composition

Different shapes of flowers and plant material give character to the container garden. Combine snapdragons, Lobelia and dahlias for a colorful and well-shaped arrangement. Think about having a hanging basket of Fuchsia over a planter of pink geraniums with Bells of Ireland reaching up. Find plants that live well in hot sun, wind and salt spray; then mix them together creatively.



Requirements

There are several considerations for choosing soil. The local soil is sandy and lacking nutrients so it cannot be used. Also, do not use garden soil, except when using a very large container. Some garden soil can be added to fill up the container before adding the mix. Buy container mixes or potting soil containing organic materials such as peat, some soil, minerals, vermiculite and limestone; these are readily available in many sizes. It is less expensive to buy the larger bags of potting mixes as the soil will keep for years. It also helps to have extra soil throughout the season as plants settle into the pots and more soil may be needed. Mushroom soil can be used as well as material from the compost pile. To either one add peat moss, fertilizers and trace materials along with about twenty-five percent sand or

perlite for good drainage. Remember to fertilize the containers on a regular basis.

Keep in mind the size of the plants in the container—the larger the plant, the heavier the mix of soil. Adding sand to the soil mix gives it the needed weight for plant support. When filling the pots with the soil, it is a good idea to use potshards or stones, or a piece of screening in the bottom to stop soil loss. Make sure water can drain from the pot. If the container is particularly large or tall, use stones or even pine cones to build up a base. Since drainage is so crucial to container gardening, it is worth the extra effort to establish a base. Fill the container with pre-moistened soil mix to just below the rim and tamp down to eliminate any air pockets. Be sure to allow room to water the plants. Let the planters settle overnight before adding the plant material.

Water is probably the most essential ingredient in container gardening. It becomes even more essential at the shore where the hot sun beats down and the wind blows. There are water systems that fit on containers, but it is probably easier to make sure each plant is watered at least once a day and two times a day is not unreasonable. Just make sure the watering is done early in the morning and/or late in the day. Water gently with a slow running hose until the water runs out the bottom.

Because of the wind at the shore, it may become necessary to protect the plants in the containers by putting them in strategic places—up against the house, in a corner on the porch or within a confined area. Also, if hanging plants are used, it may help to establish the planter on the ground before hanging it. The stronger the root system, the better the chances are of survival.

Choosing the Plants

The first consideration in choosing the plants to use is what effect is desired. Should it be formal or informal? What

plants are suitable for the chosen containers? Is this a permanent display or will it change with the season of the year? Think about the size and rate of growth as well as what plants have similar growing habits. Again, remember that water is as essential an ingredient as fertilizer. Most gardeners put flowers and some foliage in containers. When choosing from the enormous selection of plants available, it is important to determine what conditions need to be met. Are the containers going to have summer foliage or flowers or a combination of each? Will the pot sit in a sunny spot or in shade? Will it be a spring planter or an all year round raised bed at the front door? All of these factors have to relate to the design of the garden.

After determining all of the above, it is time to select the plants, keeping in mind the size, shape, and locations of the planters. As discussed in the section on design, there are endless combinations from which to select. It is a good idea to keep a journal to keep track of what works well and what should not be used again. Most often it is best to select a tall plant to use with a medium size one and one that hangs over the edge to soften the look of the planter. Be creative with the great variations in color, texture and size.

Many kinds of vegetables grow well in containers; that is, a half-barrel or a clay pot, which can be placed where the sun will be most effective or in a hot pot. (This is a specially designed black plastic box used to grow flowers and/or vegetables.) These may be purchased through "Gardener's Supply" (www.Gardeners.com). French beans, tomatoes, cucumbers, eggplant, peppers, and lettuce are just a few of the vegetables most easily grown in pots. By containing them, the fruits are more easily seen and picked at their peak. It is important to support the larger plants like broccoli and tomatoes.



Do not forget the strawberry barrel that keeps the berries off the ground. It can be covered to prevent the birds from feasting

and is a very decorative planter for the patio or deck.

Herbs are a natural for pots and can either be part of the kitchen garden or lend a formal air to the terrace. Greek basil can be trained to be a topiary while rosemary is a shrub, which attracts humming birds. Parsley, sage, purple sage, thyme, lemon thyme, chives and oregano are used in every day cooking and can be potted in a pretty display for the summer months and then brought inside for the winter. Rosemary can grow for years outside in a protected microclimate.

An easy way to enhance a bare outside wall is to make wooden containers to hold slow growing junipers as well as creeping juniper for year-round effect. The larger the shrub, the larger the planter must be to prevent freezing during the winter. Cypress, privet, barberry, and Viburnum all lend themselves to growing in pots.

Pruning is the key to maintaining an attractive plant, although growing shrubs in planters does retard their growth to some extent. Be sure to consider the size of the planter and depth of planting to prevent freezing over the winter. The relatively mild winters on Long Beach Island allow many kinds of plants in pots.

Assembling the Containers

Hanging Baskets: A wire frame basket with a wood fiber liner to fit, an eight-inch plastic water saucer, some clear vinyl tubing, soil, fertilizer beads and plant material are needed. Start by putting the vinyl tubing around the edge of the basket by slitting the tubing lengthwise and attaching it to the rim. This pads the basket's rim so that trailing stems do not break. Add the fiber liner to the basket with the dark side out and put the saucer on the bottom. If additional plants are to be added to the outer sides, cut holes for that purpose. Add loam and kelp meal to about twenty quarts of peat-based potting soil. Add four quarts of water and allow it to soak in. Fill the

basket with the soil mix to reach three inches below the rim. Pat down to eliminate the air bubbles.

Thoroughly soak each plant in a bucket of water to which a small amount of fertilizer has been added. (This is a good idea for all plantings anywhere in the garden as it helps the plant to get established much more quickly) If inserting plants in the sides, wrap the bottoms in small plastic bags and insert; then pull the plant from inside the basket tugging the plastic rather than the plant. Remove bags when plants are in place. To put plants in top of basket, fill up to one inch below the rim and insert the middle plant. Firm the soil after planting each additional plant around the middle plant. Firm again after the first watering. Add slow-release fertilizer and hang the planter after all frost is over.

Window Boxes: Window box, plastic liner, soil, fertilizer beads and plant matter are needed. A window box can be any size, but should be at least six-inches-deep because the deeper it is, the less likely it is to dry out. Look for a liner to place inside the box and make sure there are holes in both the container and the liner to insure good drainage. Add a small screen over the holes to retain the soil. Then fill the box



half way up and begin experimenting. Place the taller plants in back, the shorter ones in front and the cascading plants so that they fall over the front edge of the window box. Use plants that vary in texture, shape and color to make an

interesting setting. Foliage and flowering plants can and should be used together to create variation.

. Add a variety of herbs or construct an entire container of herbs. Placed in a south- or west-facing window they provide lots of flavor for the cook.

When putting the plants into the soil, be careful to keep the roots together. Add soil to cover the base of the plants, tamp the soil firmly and water thoroughly. Remember to soak the plants in water that has plant tone in it before inserting into the window box. Water once or twice a week unless it is hot, then water each day.

Strawberry Jars: One strawberry jar, PVC pipe with corks to fit, a circular saw drill, soil and strawberry plants or herbs are needed. It can be difficult to keep a strawberry jar evenly watered. A good solution is to use PVC pipe and cut it



to within one inch of the height of the jar and drill holes all around it. Put a cork in the bottom of the pipe and insert the pipe in the jar, adding moistened soil part way up. Then begin putting plants in each pocket, adding soil to the depth of the next pocket. Continue to add plants (from the outside in) until reaching the top. Make sure the soil is firm around each plant.

When the pot is completed, water the plants through the pipe that has been inserted.

Trough Gardens: Cement, perlite and peat moss to make the trough are needed. Soil, rocks, gravel and plant material can be added to the trough for artistic effect.

A trough garden is meant to be a miniature example of the regular garden. While any plants may be used, this type of garden lends itself to plants used in rock gardens and flat ground covers. Small plants, alpine plants and even dwarf shrubs complement the trough which is easily made of one-

third each of cement, perlite and peat moss mixed together with water and then formed into a container. Be sure to put a drainage hole in the bottom.

To fill a trough, make a mixture of soil consisting of sand, grit and organic matter, such as peat moss or leaf mold, in equal proportions. Put a piece of screen over the hole in the bottom and add the soil and rocks, if desired.

As plants are chosen, keep in mind that different heights, textures and sizes make the design more interesting. A more natural look will be obtained when plants are placed in an irregular manner, not lined up as in a window box. A tall plant might be slightly off center with smaller plants spreading out from that point. Make sure the soil is moist when spreading it over a new plant and be sure to lightly firm the soil after each one. Add a top coat of gravel for protection from too much sun and to give it a natural look. Use a liquid fertilizer at half strength periodically to help maintain the nutrients the plants need. Of course, a trough garden needs weeding as well as deadheading, but the job is much easier in such a small area.

Lush Plants all Summer or Maintenance 101

Maintaining a garden is every bit as important as the containers, the plants, and the soil preparation. With diligent and careful attention to the containers during the summer, the joy of the garden will remain well into the fall. The bright sun and the seashore winds make it mandatory to tend the garden each day. Below are five steps to maintaining beautiful planters throughout the summer and fall.

Pinching and Grooming: A healthy garden requires the gardener to pinch back, day after day after day. Remove any flower that has passed its prime by pinching it back to the joint. Also remove any dead leaves on the plant as well as on the soil. If the gardener is going to be away for a period of time, it is perfectly okay to pinch way back, removing new

flowers as well as old ones. Upon return, the planters will be bursting with flowers.

Replenishing the Soil: As the season progresses, it often appears that the soil is disappearing. Do not be afraid to add more soil of the original composition. Remember that a container cannot improve its own soil without the help of the gardener. An addition of fresh soil can give the plant the boost it needs and also enhances the look of the container. Watch for pests and disease problems.

Water: Throughout this chapter there has been a steady reminder of the importance of water. On this island with its unprotected areas, the sun, wind and salt spray are a constant threat. Therefore, it is important to water most containers each day either early in the morning or after the sun has disappeared from the garden or both times on particularly hot or windy days. Use a slow-running hose or one with a spray head so that the plants receive a gentle soaking. Continue watering each plant until water runs out of the bottom of the container. A good way to determine whether or not the plant has received enough water is to push a finger into the soil to a depth of about four inches, where dampness should be felt. If a plant begins to fade from lack of water, move it to a more protected area and water regularly. As important as watering is, there is such a thing as too much. If the container doesn't have good drainage, the plant's leaves will begin to yellow and the plant will eventually die unless it is allowed to dry out before the next watering.

There are water-retaining crystals, such as Soil Moist or Hort-Sorb LG that can be added to a container. This can be a very effective method of maintaining a supply of water for plants that demand more water than usual such as those in constant sun. The crystals are especially effective in planters made of clay or concrete as these porous containers dry out more quickly than others. One trick to help with drainage is to add granular charcoal to the bottom of the container. This helps keep bacteria from forming and acts as a purifier.

Amendments: It is essential to have a regular plan for fertilizing the garden, particularly when using containers, which lose their nutrients easily. During the peak season it is a good idea to fertilize at least every two weeks using a water-soluble fertilizer. If the slow-release pellets have been used, this is not necessary as the pellets last two or three months. Water-soluble fertilizers are added to a quantity of water and then applied to the plant. There are several kinds on the market with varying numbers that represent the amounts of nitrogen-phosphorus-potassium. A bag of fertilizer that lists 10-60-10 has a high amount of phosphorous, which containers need to enable the plants to produce an abundance of blooms. Plant growth depends upon the nitrogen and potassium.

Organic fertilizers are usually weaker than the chemical (more soluble) fertilizers; however, if used more often they will produce similar results and be better for the environment. A slow-release fertilizer such as "Osmocote" should be mixed together with compost or manure and soil. Enrichment continues over the season in a steady, even flow and does not need to be used more than twice a season. A liquid fertilizer can be used in conjunction with the slow-release capsule.

Another method of fertilizing involves spraying a plant from the top, covering the leaves with the fertilizer. The leaves absorb the fertilizer and if any is lost, it goes to the ground and is absorbed by the roots of the plants. This method can be used on most flowers and vegetables and produces quicker results.

A complete fertilizer will contain the all-important nitrogen, phosphorus and potassium as well as small amounts of magnesium, iron, boron, aluminum and trace elements. Be sure to follow the directions to ensure the most benefit. Although peat moss is used as a soil conditioner, it is not a fertilizer. It is a great additive for a container garden as it helps to absorb water and improves the basic soil.

Root Pruning: As plants grow in containers they become root bound because of the amount of plant material in a small area and the growth stimulation from the fertilizer. It is important to recognize the symptoms of a root-bound plant. Is it top heavy because the plant has grown to be three or four times higher than the pot in which it grows? Are roots sticking out the bottom of the container? Does the plant need water more often? These symptoms indicate the plant is not receiving the nutrients it needs and should be repotted. First soak the plant with water to make it easier to remove from the container. Look at the roots. If they are thick and intertwined, the plant is root-bound. Begin to remove any soil around the plant, then carefully, using a hand cultivator, begin removing roots and soil from the outside in. This allows the smaller, younger roots to grow into new soil. The rate of growth of the plant determines how much of the root structure should be removed. When this is completed, the plant may be put back into its pot or into a larger pot and filled with new soil as previously described.

Pruning the stems of the plants is done after the root pruning to keep the plant compact. Remove a small part of the stem keeping the shape as similar as possible. As the plants grow, continue to prune the stems for healthy plants.





Perennials

Flowering Year After Year

Herbaceous Perennials

Perennials, more properly called “Herbaceous Perennials,” are mostly deciduous plants that reappear every year from their roots. They are a varied and fascinating lot, providing color, shapes, perfumes, foliage forms and blooming times to meet almost every gardening situation.

In the past twenty years American gardeners have expressed enormous enthusiasm for growing herbaceous perennials. It is the artful wildness of these plants that excites us. They enable us to fuse formal design with the natural world. It is the wild profusion of flowers, their colors and scents and their florescence chaos that seduce us.

Can we have color from them in the garden for most of the growing season? The answer is ‘yes’ if properly selected and used in conjunction with bulbs and annuals.

To have a trouble-free perennial garden/bed/border/container, first choose the site. If a wide selection of different plants is to be grown, the site should be open, airy and sunny. Complete lack of sun and airiness due to trees and buildings

cannot be remedied. Most hardy perennials enjoy sun rather than shade, and well-drained soil conditions. Our sandy soil is a plus for drainage. Waterlogged soil will keep the plants from breathing properly and, conversely, dry caked soil becomes lifeless and plants will not flourish. Partial sunlight is no serious disability and may be overcome by careful selection of plants.

After choosing the site, look at the soil. Clear the area completely of weeds and unwanted plants. A site infested with weeds should be dug up when the weather is sunny and a bit windy. Both the sun and wind will help to kill unwanted plant roots and seeds.

Double digging should follow. This means working the soil twice the ordinary depth for planting or eighteen inches. First, with a spade, dig out one layer of soil (nine inches) and put aside. Next, dig out the layer underneath (nine inches) and put it aside. Incorporate compost, manure, mushroom soil or peat moss into the bottom of the trench and put back the first layer removed—spreading the deeper layer on top. If using peat moss alone, organic fertilizer is needed for a balanced amenable soil.

Trees and roots of trees are sometimes a menace to perennials. If unable to avoid them, there is a way to work around them. Using a sharp spade, dig straight down to where planting is desired. The spade will cut the small roots of the offending trees. Cutting roots of one-inch diameter or less is essential. Finding roots larger than one inch, which will deplete plants of water and nutrients, should be cause to rethink the planting site. Severing small roots will not hurt the tree, but be prepared to repeat this action every spring.

Now that the site is chosen and worked, a plan is necessary. Measure and draw a site plan to scale. When choosing plants for the garden, consider the following things:

1. Length of blooming time.
2. When in the growing season will the plant bloom?

3. Which plants need full sun and which prefer some shade?
4. How tall will the plant grow and will it need to be staked?
5. How wide will the plant grow and what shape will it take?
6. Will the garden have a backdrop such as a fence or will it be viewed from all sides?
7. Consider the foliage color, texture and condition (disease-free) throughout the season and whether it can be free of insects and disease
8. Adaptability to soil and climate conditions. Refer to the agricultural map to find the hardiness zone and choose the plants with this in mind. Sometimes a plant will be hardy in one zone and not in another. This island is mostly Zone 7.
9. What color of bloom and foliage will the plant have?

A list of perennials amenable to the New Jersey shore:

Yarrow (Achillea) "Fire King": 15 weeks blooming time, June-October; full sun; 2-feet tall; 12-18-inches wide; silvery foliage; divide in the spring.

Hollyhocks (Alcea): 6-8 weeks blooming time, July-September; full sun; 4-feet tall; 18-24-inches wide; large green leaves; best if staked.

Windflower (Anemone japonica): 6-8 weeks blooming time, August-September; sun or partial shade; 12-18-inches wide; blooms come on vertical pedicles above the foliage.

Columbine (Aquilegia): 8 weeks blooming time, May-June; partial shade; 2½-feet tall; airy foliage.

Michaelmas daisy (Aster) 'Monch': 14 weeks blooming time, July-October; from 1- to 6-feet tall depending on plant; foliage assumes rounded shape; must be pinched back by July 4; full sun; container amenable.

False goat beard (Astilbe): 4-6 weeks blooming time, July-August; lacy bloom 2-feet tall above airy green foliage.

False indigo (Baptisia australis): 4 weeks blooming time, May-June; rich blue pea-like flower on long vertical stalk; rounded foliage; divide in spring; container amenable.

Butterfly plant (Buddleia): 12 weeks blooming time, July-October; tall plant, up to 10 feet; long racemes up to 2 feet; attracts butterflies.

Bellflower (Campanula): 6-8 weeks blooming time, June-July; sun or partial shade; 2½ to 4 feet tall; foliage takes clump shape; divide in spring.

(Chrysanthemum) “Clara Curtis”: 12 weeks blooming time, July-September; full sun; foliage interest; varieties can be 2-3 feet tall; must be pinched back by July 4 to achieve full plant and many blooms.

Tick weed (Coreopsis) “Moonbeam”: 14 weeks blooming time, June-September; full sun; grows to 3-feet tall; bright golden flower; good foliage; container amenable.

Delphinium: 6 weeks blooming time, June-July; plant in large groups for showy display; full sun; tall spike blooms.



Bleeding heart (Dicentra spectabilis) “Luxuriant”: 18 weeks blooming time, April-October; sun or partial shade; fernlike grayish green foliage; vertical bloom 1½-feet tall.

Coneflower (Echinacea): 8 weeks blooming time, July-August; full sun; (also a Rudbeckia); up to 3-feet tall; container amenable.

Blanket flower (Gaillardia) “Baby Cole”: 18 weeks blooming time, May-September; full sun; drought resistant; rounded form.

Cranes bill (Geranium) “Johnson’s Blue”: 6-8 weeks blooming time, July-August; full sun; attractive foliage; container amenable.

Avens (Geum): 12 weeks blooming time, June-September; sun or dappled shade; wedge-shaped, deeply toothed foliage; 1-2-feet tall.

Christmas rose (Helleborus): may bloom in winter into spring; must be planted in shade and never moved; evergreen foliage; bloom may grow to 2 feet.

Day lily (Hemerocallis) “Stella de Oro”: 18 weeks blooming time, June-October; sun or partial shade; bloom remains open at night; spiky green foliage in clump shape; divide in spring.

Plantain lily (Hosta): 8 weeks blooming time, July-August; can be 2-feet tall; plant grown for large leaf foliage.

Iris: 6 weeks blooming time, May-June; rounded, colorful flower head on 2 foot stalk; foliage is vertical; full sun; Iris comes in tubers which are planted close to the surface.

Liatris: 6-8 weeks blooming time, August-September; full sun; blooms appear on tall vertical spike stalks, 2-3-feet tall.

Lupine (Lupinus): 3-4 weeks blooming time, May-June; blooms appear on long, hairy 1-3 feet stalks; sun or light shade.

Mallow (Malva) “Fastigiata”: 4-6 weeks blooming time, July-September; full sun; drought resistant; blooms grow to 3-4 feet.

Bee balm (Monarda) “Cambridge Scarlet”: 6-8 weeks blooming time, July-August; sun or partial shade; likes to be kept moist; attracts butterflies.

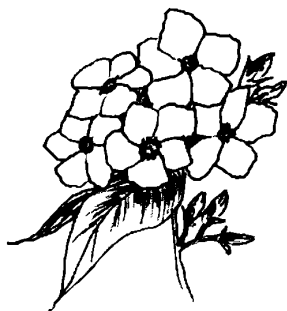


Peony (Paeonia): 3-4 weeks blooming time, May-June; sun or partial shade; before planting, the soil must be deeply dug and manured; once planted may not be moved;

foliage interest; must be staked with rings or crisscrossing strings.

Poppy (Papaver): 3-4 weeks blooming time, May-June; full sun; once established spreads freely, self-seeding flower stalk grows to 2-3 feet; foliage attractive.

Phlox paniculata "Eva Cullum": 12 weeks blooming time, July-October; full sun; some will grow to 4-feet tall; others container amenable.



Cinquefoil (Potentilla): 16 weeks blooming time, June-September; full sun; grayish foliage; will grow to 2½-feet tall.

Primrose (Primula vulgaris): 6-8 weeks blooming time, April-May; semi-shade; low growing, 4-5 inches; attractive foliage.

Black-eyed Susan (Rudbeckia): 10 weeks blooming time, July-September; full sun; large leaves make a bushy plant with erect flower; divide in spring.

Sage (Salvia): 12 weeks blooming time, June-August; full sun; many varieties are scented.

Pincusion flower (Scabiosa "Blue Moon": 16-18 weeks blooming time, May-October: full sun; leaves are lance shaped; plant grows to 2½-3-feet tall; plant likes limey soil.

Stonecrop (Sedum spectabile) "Autumn Joy": 12 weeks blooming time; plant is grown for the large mat-like foliage of succulent green; flowers are small and arise from the foliage 1-3 inches.

Globe flower (Trollius): 8 weeks blooming time, May-June; 2-inch blooms on erect stems; sun or partial shade.

Mullein (Verbascum): 18 weeks blooming time, June-October; full sun; tall, airy plant with large leaves; not long lived; good foliage.

Speedwell (Veronica bonariensis) “Sunny Border Blue”: 14 weeks blooming time; sun or light shade; blooms on slender spike; 4-5-feet tall; container amenable.

Yucca smalliana: 10-12 weeks blooming time, July-September; bell-shaped flowers appear on 4-feet tall spikes; stiff leaves come from ground level 2-3 feet wide; heavy scent.

Color

Just as form and texture are to be considered, color of the flower and foliage usually becomes the most important factor. The three primary colors are red, yellow and blue. Using any two together will cause each to appear more striking. On a color wheel, colors opposite each other are called complementary. Using complementary colors side by side cause the eye to pause and focus, creating interest. Red, yellow and orange plants appear to stand out while blue, green and violet create depth. Happy accidents can take place when planting and enjoying all colors. Sometimes the order not sought is better than the one sought.

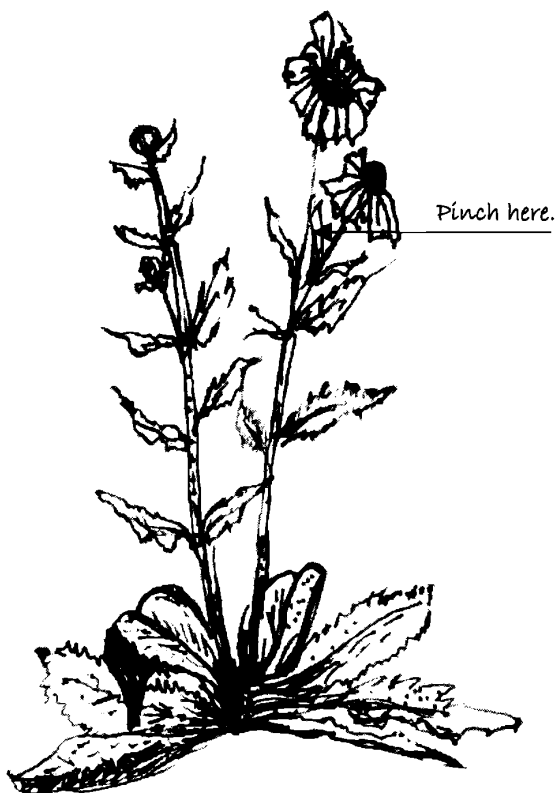
Perennials with a gray or silver surface on their leaves grow well at the seashore. The plants have tiny hairs on their leaves that reflect light and protect the plants from overly rapid evaporation of their moisture content by sun, salt and wind. Therefore, they enjoy full sun and exposure, which will keep the plant compact and allow their palest coloring to survive. Plants like various Artemisias, catmint, dusty miller, false indigo, globe thistle, lamb's ears, lavender, Santolina, pinks and sea holly will thrive in the garden. Many will come back again the following year depending on the harshness of the winter. Because they are Mediterranean born and bred, they have not adapted to low winter temperatures.

Working a Plan

Now that the plan is drawn, the above information will help with selection of plants. If there is a fence or other

backdrop, the taller plants should be toward the fence. Walk through the garden and view the planting site from all angles and then make happy selections. No rules are set in stone and plants can be changed around.

Most perennials should be planted with twelve to eighteen inches between plants. A good rule of thumb is five plants for each three square feet of garden. By planting this



way it gives room for the plant to grow and expand; air will be able to circulate; sun can get to the plant, all of which makes for a healthier growing atmosphere. Three of the same plants will produce a showier presence than just one of each.

Pinching and Deadheading

Pinching off early growth creates a more compact, bushier plant and encourages more flower blooms. Pinch by hand and, for each stem pinched, two will replace it. With fall-flowering plants such as chrysanthemums, pinch every couple of weeks until July 4. Never pinch a plant once the flower buds have set. Experiment with various plants by pinching only part of the plant and keep a record of the results to know exactly when and how long to pinch.

Blooms on flowers that have been pinched may be a little smaller but there will be more of them. If a large, prize-winning specimen is desired, disbud the plant instead of pinching. Disbudding is just what it sounds like, removing all the buds on a stem except one, sending more energy to the remaining bud, usually the terminal bloom, the last one on the branch. See illustration on previous page.

Mulching

And what is mulch? Mulch is a layer of organic material laid over the soil so that the soil retains moisture; it shades the soil from the sun; and it suppresses weed growth. Good mulching materials are compost, well-aged manure, leaf mold, licorice root, eelgrass, seaweed, shredded leaves and pine needles. Apply the mulch to a depth of two to three inches. The mulch should not touch the stems of the emerging perennials because the lack of sun and air will lead to pests and disease on the plants. If the weather has been dry, water the soil well before applying the mulch.

Staking

Staking taller perennials is essential, especially in a windy climate. Stakes can be wood, bamboo, metal or plastic. Using green bamboo stakes makes hiding them a little easier

than other varieties since they blend into the foliage. It is important to stake early in the season so the ties help keep the plant in its natural form. Place the stakes around the plant after the first flush of growth. Use soft yarn, fabric strips or strips of pantyhose as ties to protect the plant stems. For bushy plants like Paeonia, Chrysanthemum or Dicentra, circular plant frames are ideal and garden centers sell them, or construct them with stakes and cross ties. Start them around the plants early and allow the foliage to grow up through the frame.

Fertilizer

Many herbaceous perennials require little fertilizer. achilleas produce fewer flowers if the soil is too rich. Peonies and delphiniums need two or three applications each season.

A light application of general granular fertilizer around the plant in early spring is beneficial. Nutrients in liquid fertilizers are fast acting but not as long lasting.

Planting

If buying plants from a nursery, usually in a six- to eight-inch pot, plant anytime the ground is not frozen. Remove the plant from its pot and gently break up the roots to allow them to spread and grow in the garden. Dig a hole as deep as the pot and wider than the same, setting the soil aside. Water the hole well. Place the plant in the hole so that it assumes the same height out of soil that it had in the pot. Return the soil around the plant pressing down to insure that there are no air pockets. Water the plant thoroughly and mulch around the plant.

Maintenance

Taking care of a garden is work! It means watering, staking, deadheading, pinching, fertilizing, mulching, hoeing,

weeding and digging. It means waking the garden in the spring and putting it to bed in the fall.

Watering is most important when planting, when the garden is dry or when plants are in containers. Give all plants a thorough soaking at the roots. Try not to wet the foliage as this opens the door to disease. Watering at the base of each plant is time consuming but worth the effort. A soaker hose will handle this chore easily.





Annuals for the Seashore Garden

Accenting the Garden in Summer

Annuals are the pretty flowers that make lazy gardeners look good—the flowers that grace a garden with an abundance of color from early spring to late summer. Their instant blooms often lure the beginning gardener, but annuals are essential in a perennial garden too, both to plug the gaps in a mature bed and to keep it colorful after the spring bulbs have faded and again after the perennials have retired for the season.

Annuals begin and end their lifecycle, from seed to seed, in a single season. If annual flowers are not too rigorously deadheaded (pinching or cutting off the dead blossoms), many of them will drop seed and self-sow, lying dormant until volunteer seedlings appear to be transplanted the next spring. Some annuals thrive better early in the season and some later. Plant early-season annuals such as bachelor's button, China pink, Drummond phlox, larkspur, pansy, snapdragons and stock. Follow these with warm-season annuals, cockscomb,

Coleus, Cosmos, flowering tobacco, Cleome and Gomphrena, all in the same bed.

Annuals come in a dazzling array of sizes, shapes, colors and textures and are divided into hardy, half-hardy and tender varieties. These classifications indicate when the seeds, or seedlings, may safely be planted, and also which ones will survive best in the special environment of a seashore garden. The hardier plants are best suited to summer breezes that too often turn into salt-laden winds. Cultivating annuals at the shore, as well as perennials, requires a special awareness of soil and wind conditions.

Watch the Wind

Windborne salt spray kills plants easily, and care must be taken to plan and plant in sheltered locations. Constant wind causes leaf burn as well as dryness from rapidly evaporating surface water. Flower beds should be well protected from both northeast and northwest winds, and gardens near the ocean or bay need even more shelter than those just a block inland. So to avoid disappointment, create a sheltered landscape.

Be sure to know the direction of the prevailing winds when locating flowerbeds. East, south and west are the best exposures for annuals, most of which like a lot of sun. If these areas get too much wind, plan windbreaks. Most windscreens modify air movement for a distance of about twice their height, so a six-foot screen reduces airflow about twelve to fifteen feet in front of it. Any fencing that blends with the landscaping is a good windscreen; some homes have exterior wall extensions that serve the same purpose, plus blend with the architecture.

A row of mature shrubs is another sheltering medium. If starting from scratch, put in large shrubs, but be sure to plant the flowers at least five feet away or the shrubs will draw too much water from them. For a more pleasing appearance, vary

shrubs and trees with different textures and sizes. Dune fence covered with burlap is an inexpensive solution, but cover it with vines to improve the aesthetics. And, of course, any outside wall of the house gives good wind protection.

Plant a wind-protected bed against the side of the house, all the better if it has a southeast to southwest exposure. This creates a microclimate and can grow plants that normally thrive only in the southernmost section of Zone 7. Biennial hollyhocks (Althaea) will line the wall annually and snapdragons (Antirrhinum) and many other self-seeding hardy annuals will reappear for three or four years unless there is an extended winter freeze. A sheltered microclimate will also support such shrubs as heavenly bamboo (Nandina domestica) usually recommended for Zone 8. Almost any annual can adapt to the shore environment if given enough wind protection.

But there will be those times when no matter how well the garden is planned, a northeaster will attack it. It is important to quickly spray the plants with water, using a fine nozzle, to wash off the accumulated salt, which is sucking moisture from the foliage. In a worse case scenario, a storm tide might inundate the garden. If this happens, try to leach out the salt by soaking the most delicate plants with fresh water. Many shore gardens have been rescued from disaster by this diligent application.

Nurture the Soil

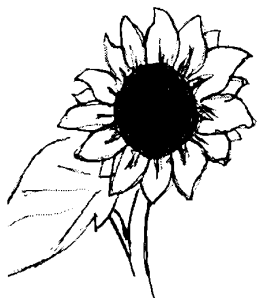
Coastal soil is sand-based, easier to work than clay soil and with good drainage. But it is necessary to condition the soil because the soil with good organic matter holds water like a sponge. Before planting, incorporate about five bushels of compost, peat, rotted sawdust or similar material into the top ten inches of soil for every one hundred-square foot area. This will retain water, provide nutrients and create air pockets important for healthy roots. If the soil is strongly acidic, add

lime; if it is strongly alkaline, add ground sulphur. Aim to bring the pH within 6.0 to 7.2. Soil preparation is especially important for annuals. Be sure to water the seedlings until they are fully established. If they dehydrate to the point where their foliage wilts, it might stunt them permanently.

Now is the time to feed the garden. Our garden club recommends organic fertilizers. It is the natural way and really the easiest. Unlike chemicals, organic plant food may be added directly at planting time. Since it breaks down more slowly, it lasts longer in the garden and saves time and work for the gardener.

An Exaltation of Annuals

There are scores of annuals, including very drought-resistant plants that are well adapted to east coast seashore planting. Plants with gray and silvery foliage, like the dusty millers, are native to shore areas. (The silvery effect is the result of fine hairs on the leaves, which protect the leaf surface from the wind and salt spray and help conserve moisture.) Many drought-resistant plants have proven themselves in seashore gardens. Following is a selection. Start at the back of the garden with plants that can grow up to five or six feet tall.



Sunflowers (Helianthus):

Use the taller varieties only if they can be totally protected from the wind; otherwise, try the dwarf varieties, twelve to twenty-four inches. Nearly fifty species of birds will appreciate their seeds.

Spider plant (Cleome hasslerana): In good soil, Cleome will grow from three to six feet tall. Its large spider-like blossoms are

shades of rose, pink, purple or white. Its seedlings resist early spring cold. It thrives in full sun and is very drought resistant.

Foxglove (Digitalis purpurea): Available in a wide variety of colors, they grow up to four feet and make dramatic spires of bloom in shady areas. They are really biennials, but self-sow if they are happy.

Mexican sunflower (Tithonia rotundifolia): A very drought-resistant sunflower with large red-orange, yellow-centered blossoms. They reach thirty to thirty-six inches in full sun and ordinary soil and are very drought resistant. Deadhead for continuous bloom.

Cosmos (Cosmos bipinnatus): The newer sensation hybrids are pink, deep red, white and bi-colored and grow to about four feet. To encourage branching and more flowers, pinch tips of plants when they are twelve-inches tall and again at eighteen inches. They will self-seed once established.

Middle-of-the-garden plants can grow anywhere from one to three feet tall.

Snapdragons (Antirrhinum majus): These come in a wealth of colors and grow from six- to thirty-inches tall, depending on variety, although it takes some searching to find the taller ones. They thrive in enriched soil in full sun. It is a good annual to get children interested and gives a satisfying blaze of color in containers or at the edge of the garden.

Zinnia (Zinnia elegans and angustifolia): Zinnias, in all their varied shapes, sizes and colors, are annuals that children love to plant. The seeds germinate quickly in warm soil and bright sun, and over the summer a single packet of seeds will produce an abundance of blooms. They have been growing in this country since the



colonial period and about twenty species are recognized today. Zinnias flower until frost. Powdery mildew will attack plants stressed by crowding, drought, dampness or cool temperatures. Water at ground level to keep the foliage dry.

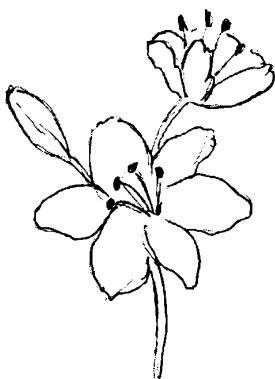
Pincushion flower (Scabiosa): An easy-to-grow, three-inch flower with rose, purple, pink, salmon, lavender or shades of blue blossoms. Deadhead for continuous bloom. Likes full sun and ordinary soil, but needs some moisture.

Verbena: This heavy bloomer has a tendency to spread and, if the red, pink, lilac, yellow or white flower stalks are deadheaded, will last well into the fall. It thrives in full sun and ordinary soil, but needs some moisture.

Flowers for Fragrance

Does the aroma of some flowers bring a scent of remembrance? Although many parts of a plant can be fragrant, it is the blossoms that spawn garden memories as the scent wafts throughout the garden. Flowers are designed by nature to exude scents to attract pollinators: birds, bees, moths and flies.

Heliotrope, Nicotiana and stock are fragrant annuals. Others include moonflower (Ipomoea alba), angel's trumpet (Datura innoxia), wallflower (Erysimum cheiri), carnation (Dianthus caryophyllus), sweet peas (Lathyrus odoratus) and four o'clocks (Mirabilis jalapa). Datura is a great reseeder or its seedpods can be saved and started inside next season. For



long-lasting fragrance, mix and match these annuals with perennial plants and shrubs such as peonies (Paeonia ssp.), Korean spice viburnum (Viburnum carlesii), hyacinths

(Hyacinths orientalis cvs.), lavender (Lavendula angustifolia, Munstead), catmint (Nepeta faassenii), butterfly bush (Buddleia davidii, Nanho purple) or lilies (Lilium Casa Blanca or Star Gazer).

Climbing the Walls

Add a strong vertical dimension to the garden with fast-growing annual vines. Some vigorous climbers can climb a ten-foot pole in one season. There is a good match for almost any color scheme. Annual vines grow well on cedar poles (easy to find these on any beach after a storm has wiped out the dune fencing). Set the pole securely in a two-foot hole and fill the bottom foot with cement. When the cement has hardened, fill the hole with soil. Use the little branch stubs to build a network of biodegradable twine for tendrils to grasp. Vines also grow on trellises, walls and fences.

Annual climbers need an early start; when sowing the seeds, follow packet directions. In Zone 7 hyacinth bean, Spanish flag, bitter melon, cypress vine and cardinal climber can be sown directly outside once the soil has warmed and frost is unlikely, usually mid-May.

Hyacinth bean (Lablab purpureus): In the new plant, olive-green leaves combine with burgundy-colored veins, while mature stems, petioles and leaves are suffused with purplish-black and plum-colored blossoms that change to a pinky-purple, which age to lilac and white. After the flowers drop, a glossy, burgundy bean pod forms and remains colorful for several weeks.

Asarina (Asarina scandens): Asarina develops a sprinkling of blooms in early summer and flowers fully a few weeks later. Lavender-pink blossoms fade to white and light green. This delicate climber is not troubled by insects, heat or storms and will remain fresh until the first heavy frost.

Bitter melon (Momordica charantia): Bitter melon has light green, puckered foliage with a silvery down covering

the emerging shoot tips and leaves. The immature gourds are homely, but break open to show a colorful orange interior. This vine grows up, not out, and slim tendrils carry the plant up to six to eight feet.



Morning glories (Ipomoea):

The pale, old-fashioned varieties like heavenly blue are always pleasing, but some newer, brighter climbers are available. For a vibrant red, try crimson cypress vine (Ipomoea multifida). Both have intriguing foliage and trumpets that stay open all day and both attract hummingbirds.

Spanish flag (Mina lobata):

Ignite the fall garden with this autumnal blaze. Sprays of long, tubular buds spark into scarlet then fade to a pale cream. A single flower shows tints of yellow, warm pink, orange and red. This vine produces rich, bronzy-purple new growth that age to a deep green. The tri-lobed leaves are heavily indented and the foliage stays intact until frost. The bottom of this vine sheds its leaves as the season progresses, so it is important to hide its bare base with a low-growing plant. This vine likes sun, but will tolerate some shade. These, too, can be pinched to encourage more branching blossoms.

Easy-to-Grow Annuals

Flowering tobacco (Nicotiana alata):

Better to get hooked on growing this twenty-four- to forty-eight-inch plant than smoking it. It is predominantly white, but also has pink, red, yellow and purple star-shaped blossoms. Very fragrant and some varieties



bloom at night. Deadhead for continuous blooms from spring through summer.

Cockscomb (Celosia cristata): Try this for some bright color. (Some would call it garish.) Celosia comes with brilliant red, orange, apricot, yellow and fuchsia blossoms and grows from nine to twelve inches. It dries well for winter bouquets.

Bachelor's button (Centaurea): An old-fashioned favorite with blue, pink, white and maroon thistle-like flowers, it grows from twenty-four to thirty inches. It is easy to grow and, if deadheaded regularly, it will bloom into the fall.

Coleus (Coleus x hybridus): Colorful Coleus is one of the easiest plants to grow. Try orange Klondike with yellow-striped Cana Pretoria or rose pink with white alyssum or Alabama sunset with its gold-splashed red leaves. Whatever their foliage color or shape, all coleus are easy to grow.

California poppy (Eschscholtzia californica): This poppy is very happy with ordinary soil, full sun and little water. Its twelve-inch branches have yellow, orange, cream, pink or rose blossoms. A practically indestructible shore plant.

Blanket flower (Gaillardia pulchella): This annual Gaillardia has large red, daisy-like blossoms with yellow tipped petals. It thrives in full sun and is especially drought resistant.

Ageratum (Ageratum houstonianum): This annual is good in partial shade and ordinary soil. Depending on the variety, it grows from twelve to twenty-four inches with clusters of soft powder puff blossoms in blue, plus pink and white. Deadhead for continuous bloom. It is good with silver-foliaged plants.

Stock (Matthiola): This very fragrant plant grows from ten to eighteen inches with well formed spikes of double florets in violet, lavender, rose, white and red. Choose from dwarf varieties; the taller types will not stand up to the wind.

It thrives in ordinary soil and full sun, but needs some moisture.

Mexican daisy (Erigeron karvinskianus): A perennial in the south, this plant will act like a self-seeding annual at the shore. It has wiry foliage and sprays of tiny daisy-like flowers that open white and turn to pink before disappearing.

Bells of Ireland (Moluccella laevis): Greenish-yellow spikes give this twenty-four- to thirty-six-inch plant its common name. There is no need to deadhead the blossoms.

Sea poppy (Glaucium corniculatum): This poppy has large red or yellow blossoms—often with black centers—and grows to eighteen inches. It is very drought resistant and self-seeds freely.

Low-growing Annuals

There is a great variety of low-growing annuals. Petunias (Solanaceae), alyssum (Lobularia), annual geraniums (Pelargonium), marigolds (Tagetes), pinks (Dianthus) and impatiens are all garden regulars. Here are some others to try.

Dusty miller (Senecio cineraria): It is not a seashore garden without dusty miller, grown for its glowing silver foliage. It mounds in a compact habit—about eight to twelve inches—and is native to the shore environment. (Also many perennial varieties.)

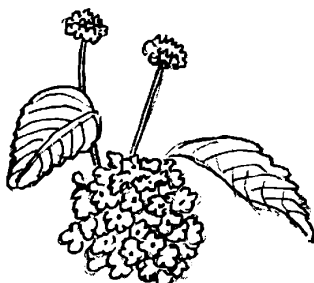
Dahlberg daisy (Dyssodia tenuiloba): This yellow daisy thrives in full sun, ordinary soil and is extremely drought resistant.

Strawflower (Helichrysum): These daisy-shaped blossoms in a wide range of colors can be dried. It thrives in full sun and is very drought resistant.

Heliotrope (Heliotropium): The clusters of deep purple blossoms are deliciously fragrant. It has deep green or bronze foliage and likes full sun and enriched soil. It needs some moisture and rewards with a long growing season if

deadheaded. Seaside heliotrope (H. curassavicum) is tolerant of salt spray.

Lantana: This lends itself to pots and hanging baskets and is not technically an annual, but a subtropical plant that can be easily wintered over indoors. It needs lots of sun to flower, but tolerates sandy soil, wind and salt spray. Planted in the flowerbed, it creeps nicely over the soil.



Sweet alyssum (Lobularia maritima): A mounded, medium-green foliage four- to eight-inches tall with purple, rose and white florets. It self-seeds freely and is a tough plant well suited to the shore environment. Very drought resistant.

Phlox (Phlox drummondii): Annual phlox is easier to grow and comes in more colors than the perennial variety. It grows about six inches in full sun and ordinary soil. Deadhead for continuous bloom. Hummingbirds love it.

Evening primrose (Oenothera biennis): Pretty yellow flowers unfold at dusk and remain open until mid-morning of



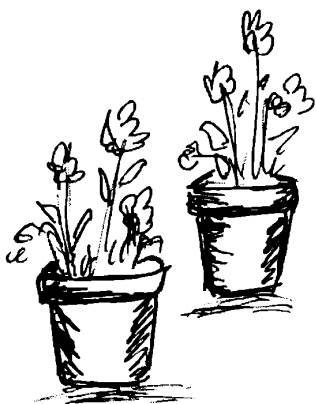
the next day. Hummingbirds visit this on their early rounds. Primrose seeds are borne in tubular capsules nestled against the woody stem and American goldfinches pick apart the dried capsules in late fall and winter. Tends to be invasive.

Portulaca thrives in sandy soil and full sun and needs little water.

Buying Annuals

There are two ways to add annuals to the garden: buying transplants at the garden center or perusing the seed packets and growing them. When buying plants, look over the garden carefully and think about color and where to put the plants. Keep the space in mind and do not overbuy. Try to keep color in the garden all season. This is a very personal

consideration; remember, some like it cool, some like it hot. Select a favorite color combination. There is such a wealth of flower material available to the gardener today, any color or color combination can be featured.



Before going out to buy, decide how many spaces to fill and have some idea how to fill them, but keep an open mind. There is great temptation at the garden mart surrounded by lush plant

material. Every year new varieties of old favorites can be found along with entirely new cultivars. But do not buy more than needed for the space in the garden. Choose only rich, medium green, sturdy plants. Too dark a green indicates the plant has been grown in low light. Tall, spindly plants with pale leaves will not tolerate dry conditions, even if good soil is provided. Turn the pot over and make sure the roots are not pot bound. Check the underside of the leaves for insects or insect eggs to avoid affecting the whole garden.

The day before planting the flowers, soak them overnight in a one-half strength solution of liquid fertilizer (fish emulsion, Miracle-Gro, Peters). This will give them a good start in their new home. Assemble all the tools needed

and dig the holes before removing the plants from the containers. Place each plant in its hole (one at a time), add water, cover with soil and firm it down gently. Once the planting is completed, take a few more minutes to put down about three or four inches of mulch to control the weeds.

Flowers are a simple celebration of life's beauty. Take the time to plan before planting and then sit back and enjoy the flower garden.





Grasses

Adding Architectural Dimension

Many types of ornamental grasses are well suited to a coastal garden. They are low-maintenance plants and perform well in sunny, hot, dry, sandy, windy conditions. Grasses come in annual and perennial varieties, but perennial types make more sense as they will mature over the years and can be divided and replanted.

Ornamental grasses are usually considered a low-maintenance, drought-tolerant plant once established. However, they must be watered throughout their first summer or through long periods of drought. Grasses are available from two feet to about ten feet in height. Some would be right at home in the perennial border; others make great specimen plants. Ornamental grasses do not need pesticides because disease and insects are not a serious problem.

These plants come in a variety of colors, forms and sizes that allow them to be used to add texture, be a focal point, soften a walkway or even screen an air-conditioner. Grasses, with their plummy panicles and unusual shaped seed heads, are

grown for texture and form. Following are some from which to choose.

Bamboo might be called the granddaddy of all grasses. Over seven hundred species of bamboo ranging from a few feet to one hundred feet or more in height grow throughout the world. There are two types of bamboo, the running type and the clump type. The running type is viciously invasive. Avoid it! If considering bamboo for the garden, be certain to get a clumping variety.

Low-growing bamboo is available in a wide variety of styles and colors. Golden bamboo (Pleiblastus viridistriatus) has variegated leaves of green and gold and grows about three-feet tall. Silver-edge bamboo (Sasa veitchii) will grow anywhere from ten-inches tall in Massachusetts to four feet in the Pacific Northwest. This one features a stunning green and white varicolored leaf. Two sources are Burt Associates Bamboo (1-508-692-3240) and Bamboo Sorcery (1-707-823-5866). If planning to plant bamboo in a seashore garden, plant it in a large pot and sink it in the ground, pot and all. Try a small planting first in case it becomes invasive. Then it can be controlled before it becomes a problem.

One of the most common shore grasses is dune grass (Ammophila breviligulata) used to stabilize the dunes that protect our beaches. It is now being used on bay front lots both as a green alternative to decking and in conjunction with it. However, be careful with this. Those underground runners that are so helpful in stabilizing the dunes are very invasive and will encroach on adjoining plantings and even travel under the decking. So watch where it is planted.

Pampas grass (Cortaderia selloana) is one of the tallest (about eight to ten feet) with dramatic large white or pink heads. Even though pampas grass is winter hardy only in the south, it has been grown on Long Beach Island. It might seem to be killed by freezing temperatures, but this does not impair its screening value, and new leaves will arise from the rhizomes in the spring. Before spring growth begins, prune

away any brown leaves and dead materials that accumulate at the base of the plant. Move slowly and wear jeans, a long-sleeved shirt and thick gloves when pruning pampas grass. The sharp leaf blades can cut through any unprotected skin. If winter is particularly harsh and a great deal of browning has occurred, the entire plant can be rejuvenated by cutting it back to within two feet of ground level with lopping shears or chain saw. Cortaderia selloana "Pumila" is a compact variety with silky panicles on tall bluish clumps, growing from four to six feet. It thrives in full sun.

Silver feather (Miscanthus sinensis) is another tall variety, growing to about seven feet with silvery white plumes from August through winter. Useful shore species are silver banner grass (M. saccaflorus), maiden grass (M. sinensis "Gracillimus") and zebra grass (M. sinensis "Zebrinus"). A smaller species, M. sinensis purpurascens, features dazzling red-orange leaves and silver-flowering plumes from September on. These prefer partial shade but tolerate full sun.

Feather reed grass (Calamagrostis acutiflora "Karl Foester") has arching green foliage about two-feet high and produces four- to five-foot reddish-mauve flower heads in panicles.

Fountain grass (Pennisetum alopecuroides) forms three- to four-foot very fine arching foliage with rose-tan foxtail-shaped blooms from midsummer through fall. It is a good choice where space is limited. Fountain grass prefers full sun and a sandy soil.

Yellow foxtail grass (Alopecurus pratensis "Aureovariegatus") is a green- and gold-striped foliage plant that grows to twelve-inches tall with inflorescence reaching twenty-four inches. It will grow in full sun or partial shade. Sea oats (Uniola paniculata) are native to the southeast coast, but are



hardy in Zone 7. It is an open-spreading grass that thrives in full sun and sandy soil with grassy foliage from two to five feet.

Low-growing grasses for the front of the border, or in front of shrubs, include a Japanese forest grass (Hakonechloa macra) with varicolored leaves. This one makes a good ground cover. Another, Aureola, has glowing, golden, bamboo-like foliage, grows to eighteen inches, and is one of the few grasses that prefer full shade.

Probably the most common of the ornamental grasses is Festuca "Elijah Blue," which forms spiky ten-inch mounds of powder-blue leaves that hold their color year round, and eighteen-inch flower stalks that turn from blue-green to buff and last all winter. All the fescues prefer dry conditions once established, but the roots need water during a drought.

Growing Good Grasses

Grasses need to be mulched for winter protection in exposed locations. Commercial mulch, salt hay, or eelgrass may be used. Bamboo plants are better protected with the mulch spread between their stalks. Mulch also protects plants from weeds and stabilizes the temperature in early spring.

If using a fertilizer, use one that contains nitrogen. Do not fertilize too often because it will make the plant grow rapidly, which will weaken it. Perennial grasses should be pruned in early spring or late winter up to six inches off the ground. When the plant gets bigger than wanted, it is time to divide. Dig up the entire plant and divide it into several smaller pieces. Use an ax with a sturdy arm or a hacksaw to divide older root systems. Divide smaller ones with a sharp shovel. In general, perennial grasses should be divided every five to ten years, although some species require more or less frequency. The necessity of division is determined by plant growth. If a plant has edges that grow outward and the core is dormant, the plant needs division. If the grass is growing

uniformly, it can be left in the ground for a longer time. One thing that ornamental grasses offer is all-season interest. They add a lot of charm to the garden in winter as they bend to the wind, as well as in summer and fall. A combination of ornamental grasses, perennials and shrubs can be stunning and, since these grasses require little maintenance, if they are combined with other low-maintenance plants, a great garden with little work can be achieved.





Bulbs, Corms, Tubers and Rhizomes

Storing Life Underground

Every gardener is an optimist at heart whether planting annual seeds for quick summer bloom or a perennial for years of enjoyment. Nothing gives more beauty for less effort than geophytes (i.e. bulbs, corms, tubers and rhizomes). Garden center displays of bizarre shapes of brown lumps that look like leather gardening gloves left out in the weather give not a hint of the magnificent color display that delights the eyes and awakens childlike wonder.

Geophyte is a term botanists use; literally meaning “earth plants.” In a geophyte new growth begins below ground—hence bulbs, corms, tubers and rhizomes. The most common are spring and summer bloomers.

Bulbs

Most bulbs are more or less egg-shaped with a “stem plate” at the wider end. This is where new roots will form.

Planting the bulb with the stem plate down is important for the new growth.

Planting bulbs in a garden will add a dramatic effect, whether they flower in the spring or in the summer. Spring-blooming bulbs, the most common, are planted in October which allows them to develop their root system before blooming as early as late February and continuing through June. Spring bulbs have a very long life since they multiply and produce more bulbs year after year. When the bloom fades care should be taken to cut the flower and stem to one inch from the ground. The remaining foliage must be left to grow unhindered until it begins to yellow and die as it is storing strength in the bulb for next season.

Designing bulb planting requires a little thought. Since the foliage must be left to grow and becomes somewhat unattractive, planting the bulbs where perennials will grow to cover the bulb foliage is a good option. Another very effective planting is an entire bed of bulbs or a container of various bulbs adding color to the yard or deck. Planting in the yard or naturalizing is best done in a very large area.

Height of the flower is another consideration. Snowdrops are as tiny as three- or four-inches tall, while cannas will grow to five feet. The smaller the flower usually means the earlier it will bloom. Blooming periods of the flowers and their colors should be heeded. In a container the tallest flower will be planted in the middle of the pot, but in a bed the tall flowers should be kept to the rear.



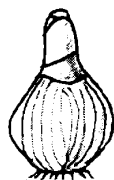
The depth of planting the bulb is very important. Always check with the garden center where purchased or the label on the packet. Galanthus (snowdrop) is planted three-inches deep while Tulipa (hybrid tulips) are to be planted twelve inches deep.

If planting in a new area, amend the soil with organic material and a small amount of mulch. Never mulch over bulbs more than an

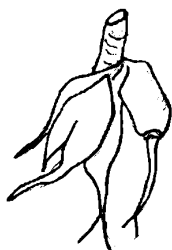
inch or two. The bulbs need all nutrients to get through to them so they can store up growth for the next year. Add a teaspoon of bone meal in the bottom of the hole in which the soil has been loosened. Place the bulbs in the hole with the root stem down or on its side and cover with the extracted soil, firming the top. Only light cultivation is needed when weeds appear. Fertilize sparingly with bone meal or 5-10-5 placed around the foliage to feed them for the following year. When the clumps begin to appear in the spring, a handful of bone meal is helpful.

Early spring-flowering bulbs do not care so much about sun and shade. Examples of early bloomers are: Eranthus (Winter aconities), Galanthus (Snowdrops), Anemone (Windflower) and Convallaria majalis (Lily of the Valley).

The second wave of spring flowering bulbs also can handle sun or shade. Narcissus (daffodils), Hyacinth, Fritillaria majalis (Crown imperials), Alliums and Tulipia (tulips) fall into this category.



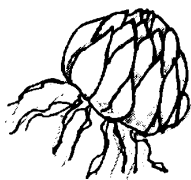
Hardy summer-flowering bulbs come into bloom at the same time as the annuals and perennials are at their peak adding to the colors, textures, scents, shapes and contrast in the garden. They all like full sun. Some of them are: Hemerocallis (day lily), Crocasmias, Eremurus (foxtail lilies), Calla lilies and Kniphofia (red-hot pokers). Don't be confused—these are not true lilies.



Another consideration is which of the bulbs are “tender,” meaning they should be planted inside the house and allowed to start growing before going to the garden in the spring. They are the ones whose roots will not handle frozen ground. If spring is early they may handle going straight into the garden. Gladiola, canna, dahlia, caladium and tuberous begonias are tender. After the foliage dies back, these “tender bulbs” should be dug up, stored on a dark cool

space where they will not freeze and planted again the following year.

Lilium (lily) bulbs are planted using a one-inch layer of gravel in the hole to insure good drainage; they do not like wet feet and are prone to rot if in damp/wet conditions. Lilies grow best in full sun or half-day sun. If planted with perennials, the lilies will be kept moist and cool by their neighbors. Never cut down a spent lily until the stem wilts. True lilies, like other flowering bulbs, need their foliage to regenerate. Since lilies divide every year, they can remain in the same garden area unless a decline in growth is noted, meaning they should be divided. A dusting of 5-10-5 added to the soil in the spring will be helpful.



Flowers that grow tall like lilies or gladiolas may need to be staked, which should be done carefully so as not to pierce the underground bulb.

Corms

The lifecycle of the true corm is not very different from the true bulb and can be handled much the same way. Corms produce daughter corms called cormels, which can be separated from the corm when it goes dormant. The original corm dies and the cormel lives on. Many corms are "tender" and thus grow in the summer. Crocus, Freesia, Liatris and Erythronium (dogtooth violet) are examples of the corm.



Caladiums are usually grown for their foliage in a shady part of the garden. Start the corm inside in equal parts of garden soil, sand and peat moss. After the roots develop and the weather is warm the plants can be moved outside, usually May.

Cannas grow to about five-feet tall and flower in various shades from yellow to a rose color. The foliage is tropical and needs to be planted in a sunny spot. Again, these can be started indoors about six weeks before the last frost, in a deep box, covering the corm with wet peat moss. Space the cannas about eighteen-inches apart in the garden and cover with one inch of soil.

Gladiolus (gladiola), one of the easiest to grow, is planted five- to seven-inches deep depending upon how light and sandy the soil is. Full sun is needed and the plants need to be treated for thrips, a tiny pest that ruins the foliage.

Tubers

Tubers differ from true bulbs and corms in appearance. Stem tubers form at the base of the stem and near the root. Begonia and Cyclamen are examples of stem tubers. Once planted the stem sends out several shoots. At the base of the shoots are small buds. When the shoots are three- to five-inches long, to propagate cut them below the buds with a sharp knife, taking a thin section of the "tuber" with the cutting. Place a cutting into rooting medium and keep moist inside a plastic bag. Plant outside when the soil is warm.

Tuberous begonias come in a wide range of colors, prefer shade and bloom from early summer into the fall. There are three types: the standard upright, the multifloras and the hanging basket types. The first two are quite tropical looking and may not be suitable for this area in a hanging basket. Plant them in pots or the garden in spring after storing in a cool place over the winter (see "Container Gardening").

Root tubers are fleshy roots that produce both buds and roots. Ipomoea batatas (sweet potato) is a classic example. Root tubers can be induced to sprout by placing them in a container with rooting mix and keeping it moist. When the shoots that emerge are several inches high, dig out the tuber, divide and plant them outside.

Dahlias are planted directly into the ground after the last frost. One tuber might have one or two eyes; they can be divided, making sure each tuber has one eye; plant alone in full sun eighteen inches away from other plants and cover with four inches of soil.

Rhizomes

Rhizomes consist of an underground stem that is thick and grows along the surface of the garden in a low trench. They can be divided by cutting into several pieces, making sure that each one has at least one bud or growing point. Division may be done right after flowering, but results will be better if done in the spring. When planting be sure the neck of the rhizome is just below the surface. The soil does not have to be rich but rhizomes need full sun. Flowers will increase over the years.

Iris is the most familiar rhizome. They are either bearded, having a fuzzy strip in the middle of the petal or beardless. There are over two hundred varieties, which vary in size and color. When bought from a nursery potted, the iris should be planted at the same depth as it is planted in the pot. When buying bare root, plant in the garden just under the soil, twelve-inches apart. Fertilize with 5-10-5 in April.

Forcing

When desperate for color in the winter, forcing bulbs is an option. Most of the common bulbs can be forced but beware! None of these bulbs is for the living room. Bulbs must have a cool place for rooting and cool site for flowering. An old refrigerator can simulate the cold outdoors for the rooting period and a sunny cool bedroom window or unheated porch will allow blooming. A range of 50-60 degrees is correct for flowering.

Buy the best and largest bulbs for forcing, asking about the nature of the bulb. Generally the earliest blooming flowers will force the best. Narcissus, polyanthus (paper-whites) are the most popular and most dependable for indoor forcing. These can be grown in pebbles and water or plant them in soil. They will take about five weeks. Never plant any bulbs for forcing until late October giving the bulbs time to mature. They may be started in succession for constant color but never after the end of February. Use a container at least four-inches deep and big enough to accommodate at least three bulbs. Spread a few pebbles in the container, place the bulbs and add more stones to within one-half inch of the top. The top two thirds of the bulbs should remain above the pebbles. Fill the container with enough water so that it shows the top of the stone. (Do not float the bulbs.) Put the planted bulbs in a cool dark location. As water evaporates, add more, but after the first time, pour only enough to raise the water level among the pebbles to the base of the bulbs. If the bulbs become pushed above the pebbles by the growing roots, gently push them back and add extra pebbles. In soil, plant so that two thirds of the bulb shows above the surface. Never remove from the dark place until a good root system develops. The foliage will be lengthening but must have at least two inches of good root. Gradually bring the pots to light over a two-week period—extending the hours each day. Do not bother to save any bulb that has been forced to try it again next year. It will not work. Plant them outside in the garden and they should bloom after one year of catch-up.

Freesias require twelve weeks to come into bloom; plant as early as August and as late as November. They require plenty of sun and temperatures below 60 degrees. Place the corms in soil in a bulb pan that will fit a windowsill. Water once well and place in a shaded area. When good roots show out of the drainage holes, bring into sun and water sparingly from the bottom. Fertilize every two weeks. They will need support since their stalks are thin.



Roses by the Sea

Romancing the Garden

Walk into a rose garden and walk into a world of enchantment and memory. The first rose bush of childhood might be remembered whether it belonged to parents or a neighbor. Recall the first tiny buds or the glory of finding a whole perfect rose, then the magnificence of each blooming rose. Roses recall the first prom corsage fashioned with roses and romantic gifts of long stemmed roses for birthdays or Valentine's Day.

Each gardener probably remembers planting that first rose bush, and those who later become obsessed with roses create special rose gardens. The fragrance on entering the rose garden can instantly transport the rose lover back in time to revisit these memories.

“There is simply the rose;
It is perfect in every moment of its existence.
Before a leaf-bud has burst, its whole life acts;
In the full-blown flower there is no more;

In the leafless root there is no less.
Its nature is satisfied and it satisfies nature in
all moments alike."

Ralph Waldo Emerson

The rose is the most popular flower in the world. Two hundred species are naturally occurring and were discovered in the northern hemisphere. Of these, thirty-five are indigenous to the United States. Any rose produced after 1867, the year hybridization began, is considered to be a modern rose and any rose which grew prior to 1867 is considered antique. The latter usually bloom only once a year. The rose is our national flower and thrives very well in seashore gardens.

Rosa Rugosa or Salt Roses

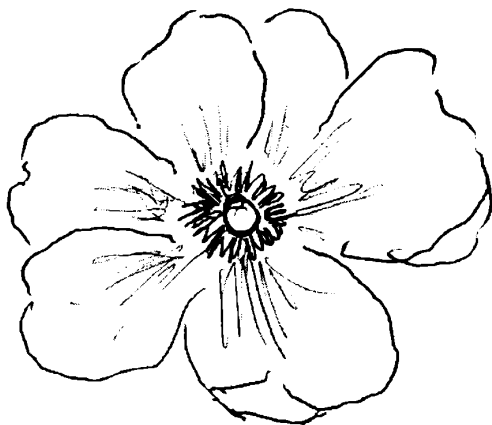
The Rugosa rose, nicknamed the beach or salt rose and so popular on Long Beach Island, originated on the shores of Japan. A seashore garden would not be complete without Rugosas. This flower tolerates drought and Arctic cold, but does not thrive where winters are mild. The species takes its name from the Latin word rugosa, meaning "full of wrinkles," and the distinctive, veined and wrinkled leaves of this versatile plant is its most easily distinguished characteristic.

But crinkled leaves are not the reason these hardy flowering shrubs have been coveted by North American gardeners for a hundred years. Rugosas are beautiful and fragrant, but some of their more practical qualities are also compelling. They tolerate soil too poor for most roses, shrug off diseases that fell their more tender relatives and endure temperatures too cold for all but a few. Gardeners want the most reward for the least effort and few plants indulge as richly as the Rugosa. In return for a few shovelfuls of compost and a light pruning each spring, we get roses that

provide more color than any other shrub. Rugosas never grow spindly, and have a noble, year-round presence in the garden. Many look great in fall, when their foliage turns a fiery yellow orange and most are handsome even in winter, when ruddy hips decorate their thorny branches.

Rugosas come in a whole host of hues. The reds range from subtle mauve to deep velvety hues, plus a whole panoply of pinks. The whites are pure as freshly fallen snow and the yellows mock the primrose. Their alluring scent can saturate the evening air like a fragrant fog.

When they are grown on their own roots, Rugosas are more dependable than budded, or grafted plants. They require



at least a half-day of full sun and are tolerant of salt spray, wind and poor soil. Prune Rugosas in early spring. Moderate annual pruning is better for their long-term health.

Rugosas are the natural roses for a seaside garden for scent, shape and structure. Some the best growing varieties are “Blanc Double de Coubert” (tall, white and very fragrant), “Agnes” (a hardy yellow), “Charles Albanel” (great for

ground cover), “Jens Munk” (the hedge maker’s rose) and “Frau Dagmar Hastrup,” (a silvery pink Danish rose that has adapted to seashore gardens and changes from maroon to copper hues for fall foliage).

Shrub Roses

Roses that are highly recommended by the American Rose Society, and that will grow in a seashore garden, are “Knock-Out” (a bright red shrub that lives up to its name), “Sophy” (dark red), “Flower Girl” (light pink), “Gemini” (a lovely pink blend), “Veteran’s Honor” (vibrant dark red), ‘Carefree Sunshine’ (light yellow), ‘Pillow Fight’ (a near white blend), “Sceptered Isle” (shiny light pink), “Queen Elizabeth Granda Flora” (a hearty solid pink), “Taboo” (a hybrid-tea, dark red with black velvet edging), “JFK” (a pure white rose, and “Peace” (a pale pink and yellow hybrid-tea named after the end of World War II).

Stop and Smell the Roses

A rose garden is a beautiful combination of size, color and fragrance. “Stop and smell the roses” has become a common expression because the scent in a rose garden is truly wonderful. Some of the best modern roses with outstanding fragrances that do well in a seashore garden are “Mister Lincoln” (high centered, dark red), “Double Delight” (a perfect bud and flower form in cream with a raspberry edging, aging to cherry red), “Fragrant Cloud” (large flower, coral red, loves sunshine, dislikes rain), “Prima Ballerina” (a parent of fragrant cloud, lovely, clear rosy pink with well-shaped bloom), “Margaret Mitchell” (white floribunda, well-shaped bloom and distinctive perfume), “Sutters” Gold (orange and yellow, overlaid with pink), and “Audrey Hepburn” (pale white and pink, lush with an old-fashioned rose garden fragrance).

Preparing for Planting

Gardeners should think about the best location to grow roses. For vigorous growth and repeat blooms, roses need at least six hours of direct sunlight each day, preferably early morning sun, which helps dry up the morning dew. This orientation helps prevent black spot or powdery mildew. Plant roses away from trees and large shrubs. Not only will they shade the roses, but also the roots travel long distances underground and compete with the roses for moisture and nutrients.

Consider drainage: Any part of the garden that holds water after a rain is not the place to plant a rose bush. Fortunately this is not usually a problem with the sandy island soil. It is true that roses like and need water—at least one to two inches a week—but it is important not to have their root systems immersed in water, or they will rot.

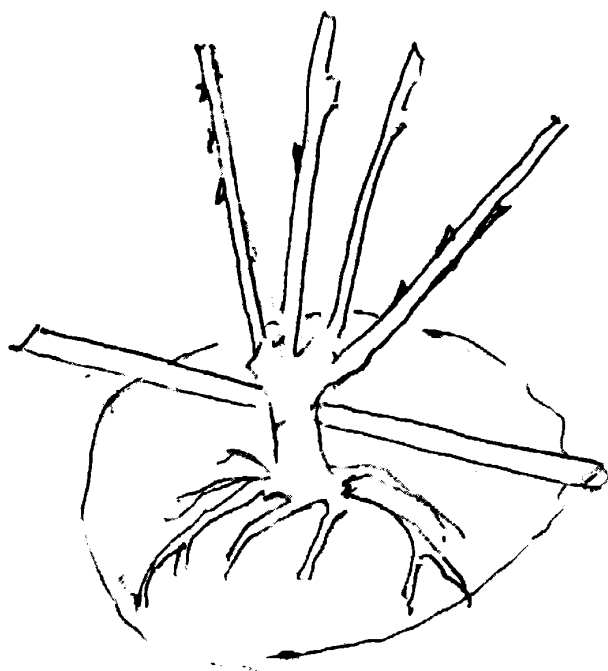
Seashore soil: Naturally too sandy so we almost need to create our own. Mushroom soil mixed with topsoil will give the ground great body. Some gardeners add salt hay, peat moss, pine needles, coffee grounds or turkey manure for enrichment. Organic biodegradable matter is the key ingredient here. The pH of the soil is important: Roses should have a soil pH between 6.3 and 6.9, which is slightly acidic. Three key nutrients, nitrogen, potassium, and phosphorus, will guarantee a fertile soil. The answer to having beautiful roses is to enrich the soil before planting.

When and How to Plant

To insure having a large selection of plant material, plan the rose garden in mid-winter. When ordering plants at this time, preferably from catalogs, roses will be shipped bare-root at the appropriate date for spring planting. After the plants arrive, remove them immediately from the shipping container, stand

the roots in water overnight and they will be ready for planting the next day.

Recent research has found that an effective treatment for planting roses is to excavate a saucer-shaped hole just deep enough to accommodate the root system and approximately



three times as wide. Roughen the walls of the planting hole with a garden fork, and mix the excavated soil with only a modest amount of compost (no more than twenty percent of the whole) before replacing it around the roots.

Mulching, Watering, Feeding

Two to four inches of good mulch should be spread over the entire area. Dry leaves meet all three standards, but are easier to handle when shredded. Pine needles, salt hay, and evergreen branches also make good mulch and are readily available locally.

With proper drainage the roses will never get too much water. Without sufficient water, foliage and blooms will wilt. The frequency of watering and the amount of water needed are dependent upon the type of soil, the climate and the stage of growth of the plants. Under normal conditions a plant should have at least one to two inches of water each week, either from rainfall or from a garden hose. In very hot weather, double that amount. Also, if the soil is loose and sandy, provide more water.

Water thoroughly. Soak the soil deeply so the water gets down to the root system. Frequent spritzes or light watering is not good. The plants will only develop shallow roots. If a watering is skipped or if it doesn't rain, the plants could become stressed. Once under stress, they are more prone to diseases and pests. It is wise to own a rain gauge. It is an inexpensive but invaluable tool that measures rain either from Mother Nature or a sprinkler. If using a hose, water at ground level early in the morning because wet tops encourage fungus growth.

Miniature roses require special watering care; although they are hardy, the root system is short, only five to seven inches under the ground. If a dry spell comes and the roses have not been watered deeply, that first five inches of soil will dry out fast. Miniatures will end up shocked, stunted, or even dead, in a short time.

Rose plants are similar to humans, who drink when they are warm, then perspire and sweat. With roses, water vapor is released through the stoma of the leaves; a process called transpiration. Water also acts as a vehicle that dissolves

fertilizers and carries the nutrients to the roots of the plant. Soil texture affects water movement and retention. The gardener must learn how much water is needed for the garden, and knowledge of soil texture will affect decisions regarding the addition of soil amendments and/or the type of water delivery method required.

Rose bushes need a lot of fertilizer. Any brand will do, but it must be applied regularly for optimum growth. More frequent applications are required in sandy soil. For newly planted bushes, start fertilizing two to three weeks after planting. For the rest of the plants, fertilize with at least three good applications per year: The first in early spring after pruning is completed, the second in early June just after the first big flush of bloom, and the third in late summer after deadheading and pruning. Do not fertilize after the end of August. Some rose growers fertilize more frequently, starting in March and continuing through August with one cup or two handfuls of fertilizer. A consistent program is most important when feeding roses.

Pruning

Nothing about roses intimidates the average gardener as much as pruning does. The problem, oddly enough, is knowing too much. In a misguided effort to be helpful some rose-growing friend or well-intentioned gardening guide has described the traditional method of pruning roses developed by experts who exhibit at rose shows. They inflict a drastic, rigidly prescribed series of cuts on their rose bushes to limit their flower production to a few huge and perfect blossoms. Forget about the right way and the wrong way. Instead, treat the rose bushes as any flowering shrub and they'll do fine.

Ever-blooming roses, those types that bloom repeatedly throughout the summer, flower best on new growth. To enhance their flowering, prune them back approximately one-third in early spring to promote a more vigorous growth of

new branches. Species that bloom just once a year and many of the old garden roses typically flower only on branches produced during previous years. Delay pruning until right after they flower. If once-bloomers are pruned in early spring, it cuts off the flower buds.

Begin pruning bush-type roses when buds swell in early spring. Remember the three “Ds” of pruning roses: Prune all dead, diseased and damaged branches. Next, remove spindly and crossing branches. To ensure compact growth, shorten remaining branches by a third. With once-blooming roses, delay this last operation until after flowering. When pruning roses, make cuts just above a bud facing out from the bush. Cut at an angle, making sure that the cut does not extend below the bud's base. Pruning will rejuvenate and increase flowering in old plants. When cutting large canes, cover with white glue to keep out borers.

Rose growers are often advised to deadhead regularly, that is, to remove the spent blossoms just above the first five-leaflet leaf. References advise removing the spent blossoms at a three-leaflet leaf after the first spring flush, the reason being to conserve foliage needed by the plant for photosynthesis. Prune not to please nature, but to make the plants conform to what is most beautiful.

Companion Planting

When incorporating roses into a garden, be careful to surround them with compatible companions. Choose plants with sun and water requirements similar to those of roses. Alchemilla mollis or lady's mantle, with its chartreuse flowers, creates an unforgettable match when tucked away in a corner with red or purple roses. Pachysandra has been known to cool the roots of roses during the severe heat of August.

Do not plant a deep-rooted, aggressive grower next to a rose bush; it will compete with the shrub for moisture and

nutrients. Plant perennials at least a half-foot away from the farthest extent of a rose bush's branches.

Do not surround a rose with tall plants that will block the flow of air. A light breeze that wafts away fungal spores is a rose's best protection against disease. Color can safely be carried right up to the foot of a rose bush by under-planting it with shallow-rooted annuals such as pansies, Portulaca and sweet alyssum. Colorful Coleus foliage can provide a striking contrast for rose blossoms.

To enhance roses without harming them, use less aggressive flowering vines such as hybrid Clematis. Let the vine wander up through the rose canes. When it blooms, the intermingled flowers will turn the rose bush into a living bouquet.

Leafy ferns such as asparagus grow beautifully near roses and compliment each other in the garden or vase. Russian sage, with its azure blue flowers and delicate-looking silvery gray leaves, is a perfect growing companion for roses.

Pests and Disease

Roses that grow on an island need special care because they are susceptible to certain diseases like black spot, due to the high humidity, and wind-borne salt spray.

Aphids: These small, sucking insects, green, brown or reddish, thrive in cool weather and attach and disfigure new growth. To prevent them, encourage or release beneficial insects such as lacewings, lady beetles, and parasitic wasps, which prey on aphids. If aphids are already on the rose plant first knock off aphids with strong streams of water, then treat with insecticidal

soap, neem extract, horticultural oil or chlorpyrifos.

Black Spot: If circular black spots with yellow halos appear, leaves may turn yellow



and drop prematurely. Bacterial spores are spread by rain or splashing water and the disease thrives in warm, humid weather. To prevent this, water early in the day and ensure adequate air circulation around plants. Spray leaves every two weeks with a mixture of baking soda and two tablespoons of ultravine horticultural oil in a gallon of water. To treat a diseased plant, remove and destroy the infected leaves and canes. Spray with sulfur or, in extreme cases, triforine. Rake up all dropped leaves in the fall to avoid over wintering bacteria.

Borers: These worm-like larvae create a condition called dieback. They enter stems injured by pruning. The parasites bore holes into canes and girdle them, causing them to swell, blacken and gradually die. To prevent borers, keep plants vigorous through good nutrition. Use sanitary pruning tools and be sure to make clean cuts. If they do become infected, prune the affected branches several inches below swelling. Discard them, plus any fallen debris. After pruning, spray with wettable sulfur or copper.

Cankers: This fungal disease first appears as red-to-purple spots, and later as water-soaked areas of stems and crowns. Dead areas may reveal small, black dots, which are fungal spores. Prevention requires periodic sterilization of pruning tools with a ten percent bleach solution to avoid unwittingly transferring spores. Cut out and discard affected parts.

Caterpillars: These soft-bodied crawling larvae of moths or butterflies chew holes in leaves and other plant parts. There is no dependable means of prevention. To treat, use bacillus thuringiensis (bt), organic neem products, or acephate. Caterpillars are most susceptible to bt when they are small.

Japanese Beetles: Again, there is no dependable known method of prevention. The beetles must be handpicked, or use traps and place near the rose bush.

Crown gall: Soil-borne bacteria cause rough, tumor-like growths near the plant's crown. Leaves turn yellow and

stems eventually die. To prevent, periodically sterilize pruning tools to avoid transferring disease-causing bacteria. If caught early enough, growths can be cut out with a sterilized knife. Treat affected areas with bleach or a disinfectant algicide. In severe cases, dig up and discard infected plant.

Preparation for Winter

To produce abundant rose blooms in the spring, the bushes must be healthy when they go into dormancy in late fall. Break off any new two- to-three-inch growth coming out of the leaf axils. They will not harden off enough to make it to the next season, and that will allow the energy to stay in the major canes. Rose bushes now want to mature, make rose hips and store nutrients in their canes and roots. These nutrients will become concentrated and act as a natural anti-freeze to eliminate or reduce cell damage during freezing winter temperatures.

Add the necessary soil amendments. A cup of lime sprinkled around each bush will help keep the soil pH at an optimum level and counteract the acidifying effect of the salts in most commercial fertilizers. Also add some 0-20-20 fertilizer to promote winter root growth. Do not add fertilizer with nitrogen in it at this time. Pile up soil or heavy porous mulch six to nine inches around the canes, completely covering the bud union. Make some collars of burlap, cardboard or newspaper and slip over the plants to hold the soil and mulch in place. Fill the collar with chopped leaves, pine straw or good, aged mulch. If adding more roses in the spring by making a new bed for them, start to prepare the new bed in the fall. If the ground is not frozen it will be easier to work. Turn the ground over, add the manure, compost, lime and fertilizer and Roto-till it in. Let it brew and steep under the winter snow and rain. The results will benefit the plants in the spring.

For existing roses, prune all very tall canes and tie the others together with twine. This reduces rocking in the ground and damage to the canes. Finally, while working in the flowerbeds, clean up all fallen leaves, which may have diseased spores, and remove any weeds remaining from summer. If healthy, roses will be vigorous, fast-growing plants, and minor mistakes will soon repair themselves. Enjoy the roses.





Trees and Shrubs

Planting for Protection

Give trees and shrubs the highest priority in landscaping the shore garden. Trees and shrubs are woody plants that give year-round structure and permanence to a garden; they are the spine and bones that hold the landscape theme together.

Restore some of the old habitat by planting cedar, bayberry, holly and beach plum. Migrating birds in spring and fall need that kind of vegetation for food and shelter. Local birds, too, rely on trees and shrubs for their fruits, nuts and seeds.

The location of the property is of utmost importance and must be considered in making good choices of tree and shrub material. Refer to the "Belt" diagram in the early pages of this book. It is clear that proximity to ocean and bay determines what plants will produce the best results. Many times the gardener wants the trees and shrubs to be the first line of defense against strong, salt-bearing winds so it is these plantings that must be the most sturdy, and they are generally native plants or those well adapted to harsh, drying conditions.

The adaptability of shrubs, especially, can be greatly affected by small differences in growing conditions.

Soil nutrients, acidity, amounts of organic matter, and silica as well as temperature, rainfall and humidity affect growth. Keep in mind that many shrubs and trees considered dangerously invasive inland are nothing of the sort at the shore. Some of those plants include Russian and autumn olive, burning bush (Euonymus), Japanese black pine, purple loosestrife (Lythrum) and various honeysuckles.

The following evergreens are suitable to front-line seashore: American holly, eastern red cedar, inkberry, Japanese black pine and juniper cultivars. In the deciduous group the following are suitable for Belt 1 conditions: beach plum, black cherry, common wax myrtle, northern bayberry, Rosa rugosa, shadbush, Virginia creeper, autumn olive and tamarisk. Belt 2 includes all specimens in Belt 1 and is more sheltered, and will support the following evergreens: mugo pine, pitch pine, Virginia pine and holly cultivars. In the deciduous category, Belt 2 supports Viburnum spp. cotoneaster, gray birch, river birch, highbush blueberry, pyracantha, sassafras, scrub oak, Caryopteris, Berberis thunbergii and winterberry holly.

Behind a windbreak of healthy trees and shrubs, a garden of herbaceous perennials and annuals can flourish. Sturdy shoreline vegetation also stabilizes the sand so that the land is not exposed to the elements that cause serious erosion. It will take about three years for the trees and shrubs in a garden to become established. Careful maintenance is critical for their health and survival.

The best insurance for success comes from carefully studying



the conditions of the site and matching them up with the plants' needs and growth habit. When in doubt, "Go Native!"

Shopping for Trees and Shrubs

Get recommendations from satisfied customers about where to shop for plant material. Organization, cleanliness and knowledgeable staff are important assessments.

How Trees And Shrubs Are Sold

Container Grown: Plant material grown and sold in containers is probably the least expensive and the easiest to handle. The root system is of primary importance in judging a healthy tree or shrub and be aware that the new soilless growing media used in containers encourage rapid root growth. Healthy roots will be evenly distributed throughout the pot and will not show signs of overcrowding or choking by growing in circles in the pot. It is appropriate to ask to inspect the root ball before making a purchase.

The tougher and hardier shrubs such as junipers, Viburnums and Spireas have smaller root systems. Avoid evergreens that show dry, burned foliage. Drought has probably stressed and weakened the specimen and recovery will be difficult. Small to medium-sized trees will be more adaptable than large ones. In choosing a tree, make sure the root ball is a good size in comparison to the size of an evenly developed canopy with well-spaced branches. Do not choose a specimen with broken branches, wounds to the trunk or branches, oozing sap, double leaders or dull foliage. Look for wilted leaves and insect infestation under the leaves. Those symptoms indicate a poorly maintained and unhealthy plant. When making a shrub selection, consider the conditions you expect: fragrance, colorful leaves in the fall, bright berries, colorful branches in winter or flowers in spring or summer. Size requirements when the shrub matures are most important.

Root Ball Wrapped in Burlap (B&B): These trees and shrubs are field grown in soil. There should be sufficient soil in the root ball to keep the roots from any kind of assault. Burlap is tightly wrapped around this root ball to make easier handling. Because of the weight and digging costs, B&B specimens tend to be more expensive than bare-rooted or container-grown materials. If you purchase a B&B plant, ask where it was grown because the soil and habitat may be quite different from that of the shore garden. If this is the case, remove some of the outside soil, pull out some of the roots so that when you plant, a few of the roots will be in direct contact with the new soil. B&B specimens can be planted almost any season of the year so long as the ground is not frozen.

Bare-Root: These specimens are generally sold through mail order houses (garden catalogs). The plants are dormant and often arrive in the early spring before growth begins or sometimes in late fall when they are near dormancy. As the term implies, bare-root plants come without any soil and must be plunged into a bucket of muddy water to protect delicate, fine roots. These roots must remain in water until planted. Cut away extra long or damaged roots before planting so that the tree or shrub is more likely to get a healthy start.

Preparation for Planting

On a barrier island the gardener must learn that such a sandy environment necessitates soil preparation. Retaining moisture around the root system requires the addition of humus to the soil and a layer of mulch on top. Salt hay is the best material for mulching because it retains moisture and retards weeds. Various seaweeds and eelgrass (readily collected at ocean or bay beaches) are suitable mulches, too. Most trees and shrubs perform well in a slightly acid soil, somewhere in the range of pH 5.5-6.0. The proper soil pH makes more nutrients available to the plant. Prepare the ground so that the new material does not have to compete with

weeds. Where drought conditions are a problem, use a hydrogel substance to help hold moisture.

Plant It Right

Evergreen Trees and Shrubs: The best planting time for shrubs is in the fall from late August until there is a hard freeze, about the end of December. It is a good time to plant evergreens as well. Broad-leaved evergreens like rhododendrons should not be moved after mid-October. Spring planting may begin as soon as the ground is dry enough to work. Fall or spring, when deciduous trees and shrubs are dormant, is a good time to plant them, especially those container-grown or bare-root specimens. A B&B plant can be planted anytime the ground can be worked.

Container or B&B Evergreen or Deciduous Trees and Shrubs: Do not plant any deeper than it was in the nursery where it was grown. Dig a hole two to three times wider than the root ball but only slightly deeper. If you have a container plant, slide out the plant, make four longitudinal cuts around the root ball, slicing in about one inch. This will keep the roots from girdling. Spread out the roots in the hole and tease out some longer roots. Fill around the roots with prepared, humus-amended soil until the hole is two-thirds full and pack firmly. Settle the soil around the roots by filling the hole with water. Level the hole with soil.

If you have purchased a B&B specimen, loosen the burlap at the top of the ball and lay it back. Scratch out some of the soil in the ball, gently, of course, and work some of the new soil into the roots. Set the plant in the hole and fill around the root ball, packing lightly, water well into the roots and cover the top with mulch. New plantings need soaking regularly, especially if rainfall is minimal. Evergreens, especially, need plenty of moisture in the fall. Evergreens will not need pruning until the third year except to remove damaged branches.

Bare-root Shrubs and Trees: These plants will come with a covering to protect the roots. Remove the cover and put the specimens in a bucket of muddy water. Measure the width and depth (from the trunk flare) of the root system. Dig a hole at least three times as wide as the roots and slope the sides gently upward. Mix compost and topsoil with the sandy soil. Set the tree or shrub at the same level that it was in the nursery. Root systems are generally branched horizontally and are not deep, most often within the top three feet of soil. Place soil in and around the roots to hold them in place while spreading out the roots carefully. Do not crowd them. Finish filling the hole with soil and gently tamp the soil. Leave a slight depression at the top to catch water. Soak the soil to remove air pockets and allow it to drain. Continue adding soil but do not cover the trunk flare. Water deeply, three to five gallons of water per inch of tree diameter. Measure the diameter of the tree six inches above the soil line. Supplemental water is all-important as it prevents transplant shock. Do not fertilize at planting time. Add two to three inches of organic mulch over the planting area, but do not allow the mulch to touch the trunk. Leave breathing room so that moisture does not build up and create a breeding ground for disease.

Not all arborists agree on the pruning of newly planted trees. Since plants need to retain moisture at planting time, reducing the leaf area is important, especially with the winds on Long Beach Island. In order to accomplish this and promote good roots, cut back the top one third of growth.

Pruning

Pruning is an important aspect of plant management but is often neglected or misused. Sometimes pruning can be as simple as disbudding or trimming roots, but often drastic measures are taken because the tree or shrub is not suitable to the site. The purpose of pruning is to conserve plant energy in

one part of the plant and divert it to vigorous growth in another place. Almost any tree or shrub is a pruning candidate for size restriction, safety, shaping, general grooming, and its own health and to enhance flowering and fruiting. Good pruning can be a way to promote growth as well as to curb it.

When to Prune: Dead or damaged wood: Now! Dangerous limbs that threaten to fall on a car: Now! Branches that cross and rub in the wind: Now! Structural problems like multiple central leaders: Now!

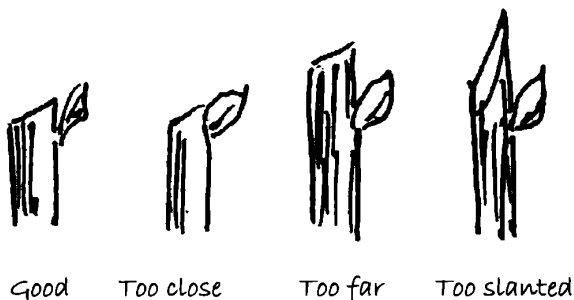
Woody plants are best pruned late in their dormant season before new growth begins. Late winter is the time to prune summer-flowering plants that set buds on new growth in the spring like crape myrtles and mimosa. Late winter is also a good time to assess the garden structure, made up of the deciduous shrubs and trees on the property and reshape them as desired. Spring, after growth begins, may be a fine time for removing unwanted small shoots or dead wood, but it is not the time to prune deciduous plants. Early summer is the time to prune spring-flowering shrubs and trees that have just finished blooming like crabapples, forsythia, lilacs and wisteria. Late summer is the time to go to work on suckers, hedges, the bases of evergreens and trees that have grown too large.

Prune when the weather is dry, not wet, to diminish the possibility of blight. Different species react differently to pruning, so although generalizations are helpful, no single rule works for all. It is not wise to prune an unhealthy plant.

Keep in mind that all the standard rules for pruning deciduous plants also apply to evergreens. The conifers (cone-bearing evergreens), which have a single main stem, should require little pruning. Pinching back the "candles" on pines will help control growth and make bushier plants.

Pruning Cuts: The basic rules of pruning ask the gardener to respect the natural form of the plant, to use restraint and not cut away too much at one time, remembering that it is surgery! Always cut back to healthy, living wood.

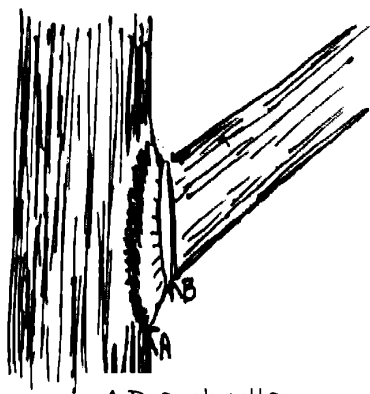
Make clean cuts with no ragged edges, and never leave stubs. There is a vocabulary to pruning to describe various cuts and what they do: **Heading back** (tipping) means cutting a portion of a branch that removes the terminal bud which forces new growth near the cut. The cut is made back to a



lateral bud that points in the direction of the desired new growth. Heading a young plant delays the production of flowers and fruit. The safest way of heading is **pinching** the tender growing tip of a shoot. **Shearing** is cutting back all the

branches just to follow a shape. Such a practice is undesirable and leads to all the round "meatball" style shrubs everywhere.

Thinning means removing an entire shoot or branch back to its main stem. Thinning reduces foliage and promotes good health in woody plants by improving air circulation and establishing a strong structure.



A Branch collar
B Cut next to trunk

It is wise to be judicious in pruning because most shrubs and trees resent it. Favor the rule that it is better to choose the plant with the right growth habit before planting so that it will not outgrow its place. It is important for the gardener to know how to prune an entire branch; therefore, a little information on the anatomy of a branch, as shown, is important. The cut should be made at the "branch collar" but not into it.

Musts for any pruning include using sterile, sharp tools; cutting to a bud, a lateral branch or the main trunk; do not leave stubs and do not dress the wound.

Other Shrubs and Small Trees for the Shore

Buddleia davidii: Flower buds form on the current year's growth. Prune anytime from late fall until just before growth begins in spring.

Calluna vulgaris (Scotch heather): Flowers on new growth. Prune in early spring.

Clethra alnifolia (summersweet): Flowers on new wood. Prune in early spring. Can be invasive so remove all suckers to control.

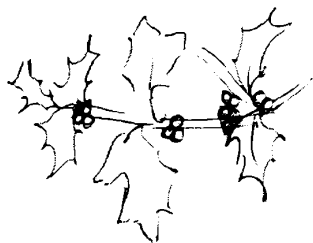
Cornus stolonifera (red twig dogwood): Cut plants to ground in late winter to produce new growth and intensify stem color.

Forsythia spp: Allow to follow natural form. Cut a quarter of the canes to the ground after flowering.

Hammamelis spp (witch hazel): Flowers in autumn on old wood. Needs little pruning. Remove dead wood.

Hydrangea spp: Big leaf hydrangea (H. macrophylla) flowers from buds developed the previous year. Leave the flower heads on plants after blooming. Deadhead in early spring by cutting back to the first pair of healthy buds. Take out one quarter of the oldest stems. The peegee (H. paniculata) flowers on new wood. In late winter prune back to three sets of buds and remove dead wood.

Ilex spp (holly): Need little pruning, especially those that do best in the shore environment (*I. opaca*, *I. glabra* and *I. meserveae*). If used in hedges, clip in spring or summer and again in mid-December.



Lagerstroemia indica (crape myrtle): Flowers on new wood. Never top this plant. Remove spent flowers and prune lightly in early spring.

Prunus spp (flowering cherries, beach plum): Flower on old wood. These need little pruning.

Salix spp (pussy willow): For long stems and many catkins, cut stems to six inches every year in the fall.

Viburnum spp: Deciduous ones flower on old wood. Prune after flowering, if necessary, by removing old and weak stems. Do not head back or tip. Prune evergreen viburnums in late winter.

Hedges

According to Jane Pepper, President of the Pennsylvania Horticultural Society, June is a good month to prune yews, junipers, Japanese hollies and other hedge plants. To prune a hedge keep it narrower on top than at the base. This way the lower foliage will get sufficient light. It is best to use hand pruners and remove branches here and there instead of shearing it into the shape of a box or ball.

Because of the erratic temperament of seashore conditions, it is important for the gardener to include trees and shrubs for protection in any landscaping plan. It is also vitally important to incorporate those specimens that have a history of flourishing in sandy, salty and windy places. Not only do hardy shrubs and trees find uses in establishing windbreaks, but also they add interest to the winter garden and give it a

feeling of permanence. A few shrubs sprinkled through a border of perennials add structure and form when the flowers go to sleep. Be sure to plant shrubs and trees for protection, but stage them for their own beauty.





Vegetables and Herbs

Eating Well

Americans are among the most well fed people in the world, but only a small number know the joy, pleasure and incomparable taste of a fresh vegetable grown in one's own garden. Advancements in science and transportation have made supermarkets able to stock vegetables year round; but only those gardeners willing to plant, weed, feed and tend their gardens will taste the juicy, vine-ripened tomato or the green bean that really snaps. Any vegetable is tastier and sweeter if it is eaten within an hour or two of picking.

Plan a vegetable garden early in the calendar year. A backyard site should have six to eight hours of sunlight daily. It's important to locate the garden away from trees or large shrubs, as their roots will pull nutrients and water away from the vegetables. An area with good drainage is necessary. If the garden lacks a large plot, select areas for small beds. If planting in rows, have them run east to west for maximum sunlight. Realize that the wind is an enemy at the seashore. Position the garden with either natural wind protection or construct windbreaks, especially if the garden will be on the

ocean or bay front.

The size of a garden will depend on how much space the gardener is willing to care for, work in and love. Starting small and enlarging through the years can be very rewarding.

After deciding where to plant the vegetables, start a garden diary. Careful notations of all successes and failures in the garden will show how to make the successes more frequent and the failures disappear.

The next decision is whether the garden is in raised beds, in the ground or in containers? This will be determined by the space allotted.

Raised Beds

Raised beds are the easiest way to start a garden and they can be made from materials such as stone, brick, concrete or wood. For example, use untreated two-by-eight-foot wood to frame in the area for the bed. Bury the wood to a depth of two inches. A bed three or four feet wide is easy to manage without stepping into the bed avoiding compaction of the soil. Remember, a carpenter can build the bed in any shape to enhance the architecture of a home: triangles, rectangles or squares.

After framing, place four layers of newspaper into the frame and fill the bed with six inches of good mushroom soil, add two inches on top every year thereafter. Use topsoil to fill the beds and amend the soil with nutrients and fertilizers. If space is not a problem, plan on leaving eighteen inches for walking between the beds. Raised beds tend to dry out, so keep them well mulched.

In-Ground Gardens

The soil in the in-ground garden is the key to successfully growing vegetables. It must be loose, crumbly and rich in nutrients. Soil at the seashore isn't good enough if

starting a vegetable garden, but it is easy to amend using organic matter. First, turn over the soil and remove weeds, stones, sticks and other unwanted debris. This is not difficult using a garden fork. Never work the soil when it is wet; it should be moist but not soggy. Now test the soil. This is important no matter what type of garden is planned. Garden centers sell small test kits. For a vegetable garden the soil should test to a pH of 6.0 to 7.0, just slightly acid.

The soil in a seashore garden needs yearly attention because so many of the nutrients just disappear into the sandy ground. If mushroom soil is available, by all means use it. As with the raised beds, cover the bedding area with four layers of newspaper. Add six inches of soil for the first year, then two inches each of the following years. If choosing to start the beds with topsoil, add a 10-10-10 fertilizer and limestone to the soil. If peat or sawdust are used (a difficult method), first put down a thick coating of limestone and add fertilizer to the peat. Compost is probably the best way to add nutrients to soil. Organic mulches such as rotted manure, seaweed and grass clippings all add necessary nutrients, which stimulate successful growth of the vegetables.

Container Gardening

Containers are ideal for decks and patios, or to supplement a larger garden space. Containers of terra cotta, tin, plastic or wood are all acceptable; anything that will hold soil will do the job. Strawberry jars, cachepots and jardinières are also attractive highlights. When selecting containers keep in mind that drainage is of paramount importance. If it has no drainage hole, make one. Drainage prevents root rot and the spread of fungal pathogens, both are plants' lethal enemies.

The choice of container is important for several reasons. Match the size of the container to the size of the mature vegetable. A container at least twelve-inches deep is enough for tomatoes and zucchini; carrots and onions need only nine

inches.

If the container must be moved after it is planted, consider the weight. Can it be lifted easily? Wind will cause damage; therefore, consider the location and need for staking vegetables. Also, consider how much sun the vegetables will need and place the containers accordingly.

To promote good drainage, save on the amount of soil needed, and lessen the weight in very large tubs, use a four-step preparation method. First, place a layer of landscape cloth in the bottom of the container, covering the drainage hole. Then layer polystyrene peanuts or plastic milk cartons according to the size of the container, e.g., six-inches deep in an eighteen- to twenty-four-inch container. Use pebbles if weight is needed to hold down the container. Cover the peanuts with another layer of landscape cloth to keep the peanuts from working to the top and the soil from settling to the bottom. Finally, top off the container with either potting soil or a mix of equal parts of vermiculite and peat moss with one tablespoon each of limestone and slow-release high phosphorous fertilizer per gallon.

Careful maintenance is essential when gardening in containers. The amount of soil in the container determines how frequently it will need water: more soil, less water—less soil, more water. Never let the soil dry out to the point that the soil pulls away from the sides of the container. Never add fertilizer to a very dry soil. Containers need frequent watering which causes the nutrients to wash out of the soil. A good rule of thumb is to fertilize every two weeks, choosing a fertilizer with an N-P-K formula with the middle number (the phosphate) larger than the other two. Never let the container stand in a saucer that contains water.

Vegetables that are amenable to container gardening include tomatoes (especially cherry-types), peppers (both hot and sweet types), eggplants (especially “Mini Bambino Hybrid”), legumes (especially “Baby Fordhook” limas and bush beans), squash (all varieties are trainable on supports),

Brassicas (cabbage, broccoli, cauliflower), herbs (especially basil, chives, dill, cilantro and parsley), carrots (try “Thumbelina”), okra (yellow hibiscus-like flowers), bush-type melons (especially “Tiger Baby Icebox”), cucumbers (try “Salad Bush”), peas and green beans (easily trainable in the vertical position) and onions

When Should Planting Begin?

Plant cool weather crops in the ground one month before the last frost. These include beets, broccoli, brussels sprouts, cabbage, carrots, cauliflower, lettuce, mesclun salad mixes, onions, parsnips, peas, potatoes, radishes, spinach, Swiss chard and turnips. Don't plant warm weather crops such as beans, celery, corn, cucumbers, eggplants, melons, okra, peppers, squash and tomatoes outside until all danger of frost is past.

Get an early start. Sowing vegetable seed indoors is rewarding and less expensive than buying plants. Where the growing season is not long, (at the Jersey Shore it's considered moderate,) the seedlings can be moved to the garden, getting a one or two month jump ahead. Seeds can be sown in almost any kind of container, but the easiest are flats with covers designed for this purpose. Starting time will depend on the germination time and the time that seedlings can be set outside. Always read and follow the directions on the seed packets. Seeds should be planted in a soilless mix of sphagnum moss, vermiculite and perlite to prevent soil-borne disease. Cover the container with clear plastic wrap if no clear lid is available. Moisten the mix with a fine spray of water and keep moist until the seeds germinate. (The plastic cover will keep moisture in.) Placing the tray in an area where the temperature is a steady 70 to 80 degrees will hasten germination.

As soon as the first shoots appear, remove the plastic and move the seedlings to the sunniest area in the house; fourteen

hours of light is optimum. Too much heat and not enough light grow leggy, limp plants. Cool temperatures, low light and over-watering will cause damping-off fungus. If any plants wither at the soil line, pull them out immediately. Do not over-water, but keep the seedlings moist. Fertilize during every third or fourth watering using fish emulsion and liquid seaweed. Watch the color of the plant leaves: if the whole plant is pale, it needs nitrogen; if the underside of the leaves turn purplish, the plant needs phosphorus; if the leaf edges turn bronze, the plant needs potassium. Fish emulsion contains all three nutrients and liquid seaweed has a high content of trace elements.

When the second set of true leaves is developed, transplant the seedlings to larger containers as necessary. Hardening off the plants should begin when they are three-inches tall. The best way to accomplish this is in a cold frame. Another hardening method is setting the young plants outside for increasingly long periods daily. Extreme cold or heat will damage young plants, and wind will lead to wilting so shelter the tender plants. Seedlings grown indoors in low light will build extra chlorophyll in their leaves. Going directly outdoors into bright light may cause an overload to the plants, causing them to fall.

Watch the young plants carefully and water every four days. Allow cold-weather crops to harden one week before planting in the ground. Plant warm-season crops into the ground after the danger of frost is past and the ground is warm, about May 20th at the seashore.

Sowing the seeds three times as deep as the seed diameter directly into the garden and covering with vermiculite can start most vegetables. When starting from seed the growing season will be much shorter than setting out established seedlings.

Optimize the space in the garden by succession planting, double cropping and interplanting. Some vegetables, such as green beans, mature fast enough that they can produce one

crop, the plants can be removed and another crop of seeds can be planted. This is succession planting. After the second crop of beans is finished, pull out the plants and plant a cold crop like Swiss chard. This is called double cropping. Cabbage, spinach, lettuce, peas, carrots and scallions will all mature early so that another crop can be planted when these are finished. Interplanting, mixing different crops in the same bed, will boost the garden yield. Slow growing vegetables like cauliflower or broccoli can be interplanted with smaller, quicker growing crops such as lettuce, onions or greens.

Think about which vegetables and herbs are enjoyed most at the dinner table and add a few specialty plants. Consider which vegetables can be canned, frozen or dried, and always remember friends and neighbors who are gardenless.

Tips for Tasty Vegetables

- Feed the soil and let the soil feed the plants. Side-dress with fertilizer to the vegetable plants every ten to fourteen days.
- Water to the base of the vegetable plants.
- Weed by hand to protect the roots.
- When planting seeds indoors always use a soilless planting medium and fertilize only with fish emulsion and liquid seaweed.
- Prepare all beds with organic matter and fertilizer before planting.
- Always press soil firmly around plants when first setting them into the garden to make sure there are no underground air pockets.

Organic Fertilizer

Prepare an organic fertilizer in early spring. Mix together one forty-pound bag of potting mix with one cup of dolomite limestone. Allow this mixture to mellow in a covered

container until outdoor planting time. (Using a covered wheelbarrow saves lifting.) At planting time, mix together thoroughly four cups of soy meal, two cups of blood meal (for nitrogen), three cups of bone meal (for phosphorous), two cups of kelp meal and four cups of green sand (for potassium). Add two cups of this mixture to the potting soil mix and use in the holes and trenches when setting out transplants.

Planting Guide



Beans: Plant bean seeds in a warm, sunny location because the seeds will rot in cool damp soil. Bush beans can be planted every two weeks (succession planting) to extend the harvest. Rows should be two-feet apart. Other beans should be planted only once. Training beans up a trellis will conserve space. When plants are six-inches tall fertilize (10-10-10) and mulch.

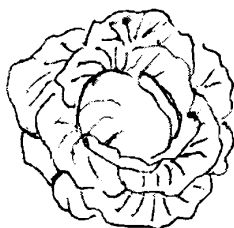
Beets: Plant seeds in early spring as soon as the ground can be worked, seeding heavier than the seed packet suggests (Not all seeds will germinate). Water heavily when the plants begin to grow to promote fast growth and a tastier beet. Mulch the plants.

Broccoli: Plant seeds indoors six weeks before the frost-free date. When setting outdoors, protect from cutworms using paper cups, tin cans or heavy paper wrapped around the stems. Extend the protection at least one inch below the soil level and two inches above. Rows should be two feet apart with eighteen inches between the plants. Interplant spinach, lettuce or Swiss chard around the broccoli plants. Using a knife cut the green buds before they burst into yellow flowers. Frequent cutting will promote more growth.

Brussels Sprouts: Grow seedlings indoors and plant when no more than four-inches tall. Work organic matter and

fertilizer into the soil just before planting. Plant in the same manner as broccoli with stem protection, rows two feet apart and eighteen inches between plants. Interplant. Harvest when sprouts are one inch in diameter. The plants will tolerate cold in the fall.

Cabbage: Start seed indoors six weeks before the frost-free date and plant outside two weeks before that date. Should there be an unexpected frost, protect the plants overnight with upside-down cardboard or plastic milk cartons. Protect the plants from cutworms by placing collars around the tender stems. To harvest, cut off the heads before they mature in hopes of having the plant produce several smaller heads.



Carrots: The seeds are so small that they should be mixed with sand or radish seed before planting. Plant into the ground and mulch with peat moss to a depth of one-half inch. Keep the area moist as it takes three weeks for carrots to germinate. If thinning is necessary, cut off the ferny tops. Do not pull them out, as that will disturb the roots of remaining plants. Harvest when large enough to eat.

Cauliflower: Plant and interplant the same as for broccoli. When curds, the little sections in the head, form, gather and tie leaves together above the curd. This will keep the sun from the curd, allowing it to blanch. Always do this tying-up on a dry day to prevent rot. Check daily. When ready to harvest, cut at the base.



Cucumbers: Plant cucumber seeds when the soil has warmed in a bed that has been fertilized. Train the plants to a trellis to conserve space and promote yield. Tie to the trellis with soft twine or strips of panty hose. Either mulch heavily or cover the ground with black

plastic to keep the ground warm. To keep the vine producing, pick cucumbers when small.

Eggplant: Start seeds indoors eight weeks before the frost-free date. Plant and interplant with cutworm protection as for broccoli. Mulch, weed and water well in dry weather. Support the prickly plants with stakes and tie up the plants. For a sweeter taste, harvest the vegetables when smaller than seen in markets. Cut the stem above the eggplant.

Lettuce: This cold-tolerant, short-season crop can be planted in the ground as soon as the ground can be worked. Plant every two weeks (succession), interplant or plant in rows. If starting the seeds indoors, plan on setting them out four weeks before the frost-free date. Begin to thin plants to three inches apart when the plants are four-inches tall; when plants are six-inches tall, thin to twelve inches between mature plants. Another crop can be started in early August for fall harvest. To harvest leaf lettuce, remove the outer leaves, pinching off at the base, or cut the entire plant back to one inch and it will continue to grow. If it's head lettuce, cut the head at soil level.



Onions: Start seeds indoors eight weeks before frost-free date setting the seedlings outside four weeks before that date, or start from sets (dormant onion bulbs). Sets will produce large onions; seeds and seedlings will produce scallions early, sweet onions in summer and large onions in the fall. Keep weeded and mulched. Diazinon applied to the bed before planting will prevent root maggots. Never plant onions in the same place two years in a row. To harvest, pick scallions at any stage or allow it to grow into onion size. When the season is over, allow the onion stalks to dry and then pull the onions for storage.

Parsnips: Sow the seeds as early as possible in a fifteen-inch deep bed that has been worked with

organic matter and fertilizer. Parsnips are slow to germinate so thinly mulch with peat moss and keep moist. Thin plants to three inches apart when several inches tall. Frost will liven the flavor in late fall and can be dug then or allow plants to winter over with a thick layer of mulch. Always side-dig parsnips because they grow deep and pulling will only break off the tops.

Peas: For pea seeds, mix organic matter, a little bit of lime and fertilizer into the soil. Plan to give the peas vertical support with chicken wire or netting. Plant peas three inches apart on both sides of the support. Sow outside as soon as the soil is workable; hot weather will burn small plants. Keep the plants weeded, mulched and moist. Water only at the base of the plant. Harvest when peas are small and sweet. Always pick with two hands, one holding the tender vine carefully and one picking the pod.

Peppers: Start seeds indoors eight weeks before the frost-free date. Plant outside when the ground is warm in a bed prepared with organic matter. Protect from cutworms as done for broccoli, spacing the plants two feet apart and interplanting. Keep the soil moist; mulch with organic matter. Harvest early when green or allow to mature and turn red. If hot peppers are grown, pick and allow to dry in a hot, airy place and grind when dry.



Potatoes: This basic vegetable takes a lot of growing space but just a few, grown and dug when small, are worth the effort. Dig a trench four-inches deep and plant the whole small potato in dry soil as soon as the ground is workable. Water, weed and mulch as they grow. When plants begin to flower, small potatoes will be right below the soil line. Dig by hand to protect the tubers when small or from the side when

the potatoes are larger. Allow to dry in the sun.

Spinach: This is one vegetable that grows best in cool temperatures. Plant as soon as possible in the spring—in successions of 10 days, interplanting around large vegetables or in rows. Harvest the outer leaves, leaving the center to keep growing or harvest the whole plant by cutting back to one inch, allowing more growth, or by pulling the entire plant. Always pull before hot weather or the crop will be bitter.

Squash: Grow squash vertically on a trellis or wire. If space is limited, choose a bush variety. In hills or mounds that



have been mixed with organic matter, plant six seeds about two inches apart. Mulch, keep moist and fertilize. When seedlings appear, thin to three per mound. Water the base of the plants only to prevent mildew. Harvest summer squash (this includes zucchini) when three-four

inches long. The plants must be checked daily due to rapid growth. If the summer squash matures completely, the vine will die. Winter squash, acorn and pumpkins, should mature completely on the vine.

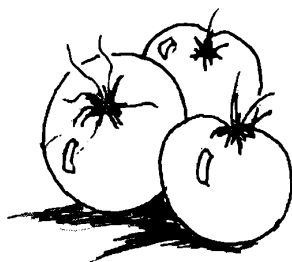
Tomatoes: Vegetable or Fruit?

Tomatoes are a vegetable/fruit that most seashore gardeners want to grow. Indeterminate tomatoes continue to grow on large vines throughout the season; determinate tomatoes, on compact bushes, only produce one crop. An F1 hybrid tomato has seeds that are an intentional cross and will produce better than average tomatoes but the seed from the first crop will not grow the same good tomatoes the next year. If the seeds are OP (open-pollinated) the seeds will produce the same tomatoes year after year. Disease resistant tomatoes

will be labeled "V" (Verticillium wilt-proof), "F" (Fusarium) and "N" (wilt-proof and Nematodes proof). Tomato plants infected with any of these diseases will decrease the yield or destroy the plant completely.

The best place to locate a tomato bed is where it will receive full sun all day, has protection from the wind and has organically rich soil and plenty of water. Tomatoes should be planted in the same bed only every four years. Sow seed in a soilless medium six to eight weeks before the frost-free date. Plant in flat or plug tray, two seeds in each cell. When the first true leaf (one with serrated edges) appears, get rid of the weaker plant by cutting it off at soil level so the roots will not be disturbed on the remaining plant. Give the plants as much light as possible, direct sun or, better still, artificial light for fourteen hours daily. Sturdier plants will be grown if they are "brushed" twice daily; rub your hand very gently along the top of the seedlings. If the seedlings begin to be leggy, allow a fan to blow gently on them. Fertilize the seedlings weekly with fish emulsion and liquid seaweed.

When the seedlings begin to grow and crowd, transplant to larger and larger containers. With each transplant bury the whole stem to below the first set of leaves allowing the plant to grow more roots. By the time the plant is set into the ground, a large root system that makes a very sturdy plant will have formed.



Tomatoes love warmth; do not move outside until the ground is warm! Daytime temperatures should be above 65 degrees and nighttime above 50 degrees. The plants must be hardened or the shock will be too much; while they are hardening, prepare the bed. Dig a basketball-size hole. Work compost or organic material into the soil and soak the hole

with a cup of high-phosphorus fertilizer one-half hour before planting. Add one teaspoon of Epsom salts to the hole. If the plant is stocky, plant it deeply with only three to four branches above the soil. If the plant has become leggy, dig a trench along with the hole, then bend the leggy stem and lay it sideways in the trench. Plant allowing only three to four branches showing above the soil line. Roots will grow out from the stem and a sturdier plant will result. Press the soil firmly around the root ball and water lightly to settle the soil and remove air pockets.

After setting into the garden do not fertilize again until flowers appear. Protect the plants from cutworms, wind and cold. Once the transplants are established keep them watered and mulched. To encourage the plant to grow more fruit, prune out the small shoots that form in the joint between the leafy branches and the stem. Gardeners differ about training the plant to 1 stem, cutting off all others, or to allow three to four stems to mature. In the hot seashore climate, four stems that have enough foliage to protect the tomato from being scalded by the sun seem best.

To know when the tomato is ready for picking, watch the bottom, the blossom end. Fruit will ripen more for one to two days on the windowsill. Be sure to pick before the tomato cracks. Keep them out of the sun when ripened. The flavor will be lost once a tomato has been refrigerated.

Getting the Growing Going

Consider space when planning a garden. A four-by-sixteen-foot bed, with careful planning and planting can grow twenty varieties of vegetables. To accomplish this, plant in broad bands, closer than the recommended space. Individual plants will not produce as much but the overall harvest will be greater. Close planting helps cold crops because they shade each other.

Supports require planning. Decide which plants will need supports and where they will be planted. Erect the supports before planting the vegetables. As these plants begin to grow, help them to attach to the support by twining the young plants around the support. If the plant gets too tall, snip the top to promote a sturdier plant. To tie a plant to a support, use a soft material, like strips of old pantyhose. It may be necessary to use a soft sling to support the vegetable. Pantyhose are good here too.

Pole bean supports should be made of one-by-one-inch lath, six-feet long. Erect them in teepee shape using three poles tied together at the top. Plant beans at the foot of the poles. A cold weather vegetable can be interplanted inside the teepee.

Fertilizers stimulate healthy growth. Organic fertilizers are rotted manure, compost, blood meal and seaweed. Inorganic fertilizers are sold in bags at garden centers; the best is a 10-10-10 mix. Do not allow inorganic fertilizer to land on the vegetable plant itself, but apply them from the side. Never fertilize seedlings with inorganic fertilizer.

Watering should be done by hand, a soaker hose or a drip system. Seedlings need constant moisture to thrive. Older plants should be watered when the soil is dry. Water until the soil is moist to a depth of three inches. Check soil for dryness by sticking a finger in the soil.

Companion planting is an effort to keep the vegetables healthy and insect-free without using pesticides. Plant beans with potatoes to keep away beetles; chives with lettuce and peas to discourage aphids; marigolds with beans to check beetles; nasturtiums throughout the vegetable garden to deter aphids, beetles and squash bugs; herbs among cabbage to deter cabbage butterflies; tansy to keep away cutworms.

Rules for Environmentally Friendly Vegetable Gardening:

- Select disease resistant vegetable seeds and plants.

- Allow enough space between plants for good light and air circulation.
- Keep a tidy and clean garden by removing all dead or infected plants.
- Keep the garden weed-free.
- Use organic mulches.
- Use traps for slug or beetle infestations.
- Use slow-release forms of nitrogen like compost rather than fast-release forms of commercial fertilizers that attract aphids, thrips and other insects.
- Use biological controls—Predators: ladybugs, praying mantis, soldier beetles, spiders and lacewings. Parasitoids: Encarsia formosa (a mini-wasp). Pathogens: Bacillus thuringiensis (a naturally occurring bacterium that kills caterpillars). All are available from nurseries or by mail order.
- Use hand-held vacuums to suck up white flies from plants.
- Use the least toxic chemical controls like insecticidal soaps, horticultural oils, absorptive dusts such as diatomaceous earth and silica aero gel, growth regulators that prevent insect growth, and botanical pesticides derived from plants such as the neem tree, which act as anti-feedants and repellants.

Herbs

Herbs in the vegetable garden make excellent companion plants. They do not have the nutritional value of vegetables, but the zip and zing they give to food make them more than worthy of growing space. Herbs make a charming border for the vegetable garden and are perfect for container gardening. Grow herbs alone or mix with vegetables or flowers.

- **Parsley** is a must. It takes a long time to germinate but the plant itself makes a fluffy mini-hedge along the garden path.
- **Basil** is a must companion for the ripe Jersey tomato. One or two plump plants are usually enough to last the summer.
- **Oregano** and **marjoram** are so much alike growing one or the other is enough. They are both pungent, but oregano is more so, use only small amounts.
- **Dill**, **mint** and **rosemary** have a spreading habit. Plant in a confined space, such as a pot or cinder block to prevent a garden takeover.
- **Garlic chives** are a perennial. Seeds like a cool place to germinate but the plants are very heat-tolerant and can be clipped all summer.
- **Thyme** is a favorite herb for cooking and the plant itself grows and grows making cutting welcome.



Herbs also have medicinal uses.

Lavender is a beautiful plant to grow in the garden, and dried is known to be soothing and helps relieve depression. Dried chamomile flowers make a tea that is pleasant to drink, and the tea lightly sprayed over seedlings helps prevent damping off. Medicinal herbs have been used the world over for many centuries. This topic is well covered in other literature.



Propagation

Increasing the Stock

Once a garden has been successfully created in the unpredictable, variable and sometimes brutal weather conditions of a barrier island, the gardener will want to beautify the garden by preserving and nurturing the trees and perennials that thrive there. Propagation is a fairly simple, very affordable gardening technique that improves and expands established beds, provides new plants for another spot in the garden or makes a gift for a friend's garden. Also, plants grown from cuttings and division will more closely resemble the parent plant than the seedlings from self-sown plants.

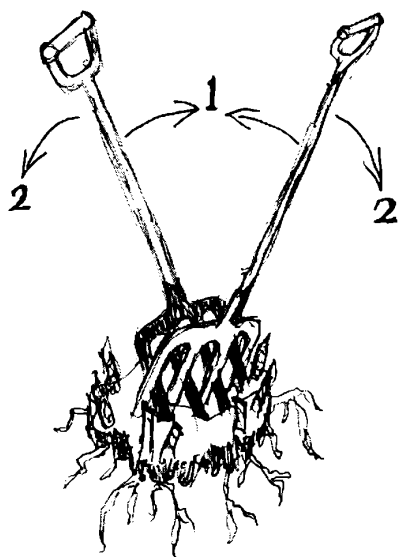
There are a number of different methods of propagation, depending on the variety of the plant. Most common are: layering, grafting and division or separation. As coastal winds are stronger and the sun more intense, plant material must receive special protection from the elements during propagation. Successful propagation involves the maintenance of high humidity to prevent death by desiccation in dry air, and a delicate balance of lighting so plants do not cook in the

bright sunlight, but will not have their food reserves depleted by darkness. The correct sterile rooting medium, generally kept at about 70 degrees, will encourage growth. (Garden soil contains fungi that will rot seeds and cuttings.) Here are some examples of the correct methods of propagation for various seashore plants.

Separation of Fleshy-rooted Perennials

Daylilies and Hosta: When clumps of fleshy-rooted perennials become overcrowded, it is necessary to divide the roots into smaller clumps about every three to four years. Choose a cool, cloudy day in either the spring or fall to protect the exposed roots from being dried out by the sun. Use a saw, perennial spade or sturdy knife to cut tough roots.

Start by loosening the soil around a whole clump. Lift



the clump from the ground and lay out plants on one side with roots facing toward the planter. Place two spading forks, back to back, into the center of the clump. Holding one fork in each hand, work forks down into the center of the crown, then carefully pull forks apart to separate the crown into smaller divisions. Make sure each division has a portion of the crown, several strong roots and at least one fan of

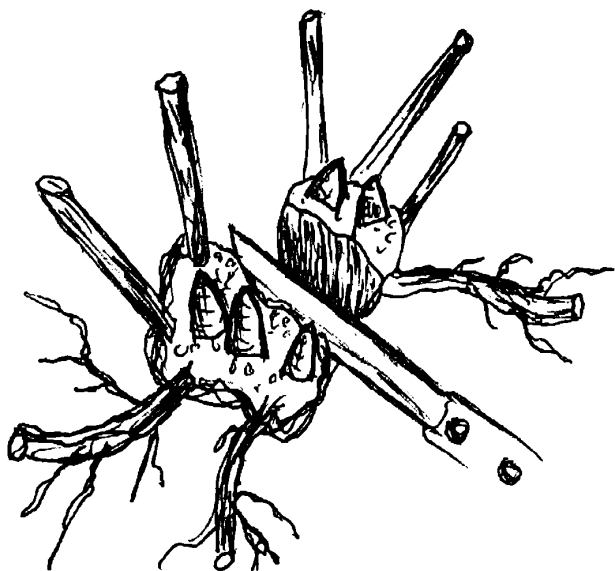
healthy foliage. Inspect for insects and discard diseased or

rotted plant material. Dust cut surfaces with fungicide to prevent rotting.

To prepare the soil for planting of new clumps, add compost or peat moss and fertilize with bone meal or super phosphate. Dig shallow holes, wide enough to allow roots room to spread out horizontally. Leave sufficient distance between holes for future growth. Water well.

Separation of Tuberous-rooted Perennials

Peonies: Since peonies are large plants which need room and do not liked to be disturbed, plant the peonies three feet apart. When it becomes necessary to separate the plants, no more often than seven or eight years, use a sharp knife to



slice the tuberous roots. Cut back old stems to six inches. Carefully dig out each plant and gently wash roots to expose buds. Starting at the crown, slice down, making sure each division has three to five buds (or eyes). Sections with one or

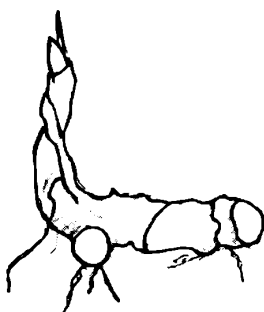
two eyes can be planted but will take longer to become a plant of flowering size.

To prepare the ground, dig a hole eighteen- to twenty-inches deep and twenty-inches wide. Fill the hole with a mixture of composted cow manure and garden soil to within eight inches of the top. Add one inch of plain soil to separate the peony roots from contact with the manure, which could burn the roots. Add a six-inch layer of soil and mix in approximately four trowelsful of bone meal.

To plant, place the peony root in the top soil layer, with buds or eyes two inches (or a little less) below the surface. Peony eyes need below-freezing temperatures for at least six weeks to ensure blooming. Add or remove soil to reach correct depth, spread roots evenly in soil and fill hole with additional soil. Firm the soil down by hand, then water. Dividing is best done in the fall.

Division of Rhizomatous-rooted Perennials

Bearded iris, Bergenia, Red Hot Poker: Rhizomes are stems, which grow just below the soil surface, behaving like roots. Rhizomes need to be divided every four to five years, when the bloom quality and quantity decreases and the rhizomes start pushing up and out of the soil.



After the flowers fade, carefully loosen the soil and lift the clump. Gently shake and rinse off the soil in a pail of water, protecting the fine roots. Separate

by hand at natural divisions or use a sharp knife to cut the rhizome into sections, keeping a healthy fan of leaves and sufficient roots on each section. Save as much new rhizome as possible; the tissue contains essential nutrients for new

plant growth. Remove damaged, diseased or discolored plant material. Trim rhizome leaves back to three inches, keeping a natural fan shape to foliage (tallest leaves in center). Dust cut surfaces of rhizome with a fungicide. Dry in the sun to help heal wounds and make plants less susceptible to disease.

To plant, amend the soil with compost. Dig a shallow trench and build a small horizontal soil ridge along the center of the trench. Set the rhizomes along the ridge with foliage running in the same direction and roots dangling down both sides. Cover with two to four inches of soil so rhizome is sitting half in and half out of the ground. Firm soil with hands. Sprinkle bone meal or low-nitrogen (1-10-10 or 5-10-5) fertilizer in a ring around—but not touching—the new plants. Water well.

The outer edge of the original clump will produce the most vigorous growth. Repeat fertilizer application in early spring before blooming and late summer or fall after blooming. Dividing is best done in late September or early fall.

Separation of Loose, Multiple, Fibrous Roots

Asters, bellflowers, Gaillardia, Phlox and daisies: Plants with loose, multiple, fibrous roots are best divided in early spring when growth is just beginning or fall when growth has stopped. Choose a cool, cloudy day and protect so sun and wind do not dry out the roots. If dividing in the fall, cut foliage back to minimize water loss and shock. Always replant as soon as possible

Loosen the soil well in area around the clump with a fork, ensuring that extended root system is not damaged. Lift plant and gently shake loose soil off roots, leaving the matted roots connected to the stems by crowns where the roots meet the stem tissue. Hose clinging soil off crowns and roots. Gently pull the intertwining roots apart where at least one crown with healthy shoots and roots are seen. Discard dry,

woody center of old crown and unhealthy looking portions along with insects. Trim with a sharp knife or pruning shears. Dust roots with a fungicide.

To prepare for planting, amend soil with compost or peat moss and add bone meal and super phosphate or fertilizer. Dig the hole the same depth as the original hole. Set plant in hole, firm soil and water well. Separation is best done in early spring.

Root Cuttings

Oriental poppies: Root cuttings are best taken in the late summer or fall when the plant is dormant and roots are filled with stored food. If making a few cuttings, uncover a root or two with a trowel. (Or dig up entire plant, taking care not to break brittle roots.) Tease soil from the plant crown to uncover roots. Cut the roots, at least pencil thick, into two-to three-inch sections with a sharp knife. Root cuttings can be planted horizontally or vertically. To prevent vertical root cuttings from being planted "upside down," make a straight cut at the top of "up" end, which was closest to the crown. Make a slanting cut at the bottom end. This is necessary so that the plant will not waste energy growing "up" when planted upside down. Poke the root section into a hole made in standard potting mixture. Cover with a one-inch mixture of half builder's sand and half peat moss, water and keep at approximately 50 degrees. (The use of a rooting hormone may delay or even prevent new growth.) Keep in cold frame, out of direct sunlight, covered with plastic to retain moisture. In four to eight weeks the new plantlets will need strong light. Remove plastic, water them and move to a cool greenhouse or four- to six-inches below a pair of 40-watt fluorescent tubes. When plants have two to three sets of leaves they can each be potted in a four-inch pot. Feed with half strength, soluble plant food. Water sparingly to encourage root growth. When hardy, plant outdoors in autumn or early spring.

Ground Layering

Hydrangea, Buddleia, Caryopteris, Azalea and Forsythia: A branch covered in the ground may naturally root and produce a "new" plant. Another method is to make a slanting cut two-inches long through the top side of a branch

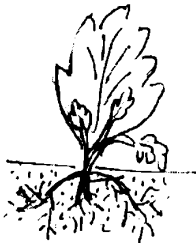


twelve inches from the tip during mid- to late June. Peg this branch to the ground. Twist branch to open cut, where roots will grow later. Mound soil over the branch. After about a year, make a cut with a sharp knife or

pruning shears in a section between the parent plant and the new root system. Allow time for "new" plant's root system to become established before transplanting.

Air Layering

Holly, Rhododendron and Azalea: With a sharp knife, make a slanted cut into a stem. This is where a new plant will form. Hold the cut open with a toothpick, apply rooting hormone, wrap in damp, unmilled sphagnum and cover with plastic sheeting and hold tight with tape. When several roots can be seen through the sphagnum, cut the new plant off below the root ball and pot in a well-drained soil mix.



Leaf Cuttings

African violets, begonias, Kalanchoe and Coleus: With a sharp knife or scissors, remove a healthy leaf from a plant. Place the stem in water or soil to root. Keep

out of direct sunlight for first week. Mist daily. Keep soil moist. (If soil does not glisten when pressed, it needs water.) A plastic bag over the specimen for the first week will aid rooting.

Fleshy Stem Cuttings

Most herbaceous perennials, begonias and Coleus:

Early in the day, with a sharp knife or pruning shears, nip off the end of a "new growth" shoot containing two sets of the leaves. Cutting should be three inches in length from a plant which is not in bloom. Place cutting directly in water, but only temporarily. Remove the lower set of leaves, leaving two sets of nodes to go below the surface of the soilless mix, where roots will form. Dust the cut end of the stem with powdered rooting hormone, being careful to use the correct strength for the variety of plant. Carefully plant the cut end of the stem in a hole poked with a pencil in a container filled with a light, sterile soil. Pre-wet rooting mix before inserting cutting. Firm soil around stem of cutting. Water immediately. Wrap a plastic bag around the container to provide humidity and encourage rooting. Water gently three to four times the first week, tapering off with time. Do not fertilize during rooting period. Do not be tempted to root fleshy stems in water. Yes, they will root, but the roots developed are difficult to transplant successfully.

Pelargonium Cuttings

Annual geraniums: Select stems with new green growth, firm but not woody, with at least three nodes (points where leaves attach). Cut across stem, just below a node, with a sharp knife. Remove flowers, buds and all but a few leaves and allow cuttings to dry in a shaded area for one to two hours to seal the ends, helping to keep decay-causing organisms from infecting the stem. Place cutting in a mixture of one part

sand and one part peat moss, or one part perlite and one part peat moss. Press firmly into a container; moisten so medium is damp but not soggy. Insert cuttings one inch into medium with enough space between to prevent leaves from touching. Rooting hormone medium is not necessary nor is it necessary to cover with plastic since Pelargoniums are relatively succulent. Firm soil to eliminate air pockets.

Water cuttings with a gentle stream of water when the soil is dry to the touch. Do not wet leaves. In a few weeks, when new leaves appear and plants resist gentle tugging, they are ready to be planted in a clean four-inch pot half filled with potting mix. Dig cuttings up with a fork, place in pot, firm additional mix around roots, water and place in bright area out of direct sunlight. After a few days, move to direct sun. Feed monthly after new leaves appear with a liquid houseplant fertilizer using half the recommended strength. When plants reach five inches, pinch tip to force growth of side shoots.

Hydrangea Cuttings

Hydrangeas love coastal living. Successful propagation requires selecting softwood, the section of the stem that is between brand new and the fully mature, for rooting. Work early on a cool day in June or July, when shoots are fully hydrated. Use pruning shears to cut three- to five-inch lateral shoots, containing at least two sets of leaves, at about one inch below the second leaf node at a point where the stem bends and then breaks with a characteristic snapping sound. At all times, keep cuttings out of the direct sun.

To prepare cuttings for rooting, remove lower set of leaves and shave away a strip or two of bark at the stem tip, to open up wounds where the roots will grow. Coat with rooting hormone, tap off excess and insert into a moistened mixture of sixty percent perlite and forty percent soilless mix. Tuck in a plastic bag and place in a sheltered part of the garden until roots develop—about six weeks. (If soil does not glisten when

pressed, it needs water.) Pot tiny shrubs in eighty percent soil mix and twenty percent perlite, water with nutrient-rich seaweed fertilizer and place in a sunny spot in the garden. Shelter over the winter. Plant outdoors in the spring.

Hardwood Stem Cuttings

Holly: Holly trees thrive in the sandy, windy conditions along the coast. Holly seedlings grow from berries distributed by the birds. Holly twig cuttings, four- to six-inches long and pencil thick can be propagated from cuttings taken in the winter from the current season's healthy growth and planted in May. Cuttings can also be taken in the summer from partially hardened new growth and planted in the fall.

Prepare this cutting with a sharp knife and remove the lower leaves so that the lower portion of the cutting is a bare stem and the upper portion has at least three leaf nodes. With the sharp knife, make an angled cut directly across a node where a pair of leaves had been and cut off flush with the stem. The new roots will grow at this cut. Moisten the stem, dip it in rooting powder, tap excess powder off and place cutting in a pot of loosely packed and pre-moistened, gritty medium of one part peat moss and one part perlite. Wounding by making shallow cuts about an inch long on each side of the stem base before dipping in rooting compound will cause roots to grow all along the wound, not only at the base of the stem. Cuttings should be kept at a temperature of 70 to 75 degrees in bright, not excessive, light to encourage photosynthesis. Spray the leaves often to keep leaves moist and water. A flat of cuttings can be placed in a plastic bag with holes for aeration to keep the humidity high. Roots will form in two to three months. Very gently tug on the stem to see if cutting offers resistance to test for formation of roots. Transplant outdoors when danger of frost is past.

Seeds and Self-sowing Plants

Lychnis, Lunaria, poppies, larkspur and snapdragons: Some seedlings will happily appear in the spring from the seeds sown by plants in the garden the year before. These seedlings can be thinned and transplanted into other garden locations. The gardener can help this process by saving dried seedheads in a closed container (medicine bottle) containing a desiccant to keep the seeds dry. Keep seed container in cool location and sow individual seeds at the appropriate time.

All these propagation methods are fun to try, and experience with them broadens one's knowledge of gardening. Refer to the chapter on "Seeds and Planting" for the process of starting the garden from seed.





Natural Solutions

Creating Healthy Remedies

When the first seeds were deliberately planted, pests became the bane of all gardeners. The pest can be a weed that invades the garden space or an insect that likes to feed on growing plants. Left to their own devices, these pests will reproduce quickly. Tilling the soil makes a happy environment for the pests to feed and grow. Planting flowers and vegetables in the garden allows insects to hop from plant to plant, quickly making their presence known.

Organic gardening methods imitate nature's own process of life, death and self-renewal. By using nature as a standard, gardening can be done without dangerous chemicals, pesticides or fertilizers. Organic gardening uses less water, creates healthier plants, builds up the soil and attracts butterflies, worms and ladybugs, all allies of the gardener.

The most potent control agent to keeping the garden weed free and insect free is the gardener. Pulling the weeds, picking off the large insects and finding the small insects early in their invasion determines, in large measure, the success of the garden.

Weeds

Young weeds with their roots should be carefully pulled by hand early in spring before mulching the garden. Dousing them with boiling water can kill weeds. Salt and pepper works wonders on the weeds growing in cracks of the sidewalk or patio, as does vinegar.



Mulch is essential to retard weed growth in the garden, to lessen the need for water, and to maintain soil temperature around the plants. Decomposition of the mulch also adds fertilizers to the soil. Compost and seaweed are the top choices for mulch. *Right Dress* is a commercial mulch if the natural is not available. Always keep mulch away from the crown or stems of plants to prevent disease. Brown grocery bags painted with boiled linseed oil and allowed to dry may be used on the ground to retard weeds. The paper will give the garden a "strange" appearance that a layer of mulch can remedy.

Compost is the perfect mulch and creating it is not difficult. Place a compost container under the kitchen sink to add the food scraps (no meat) without walking outside to the compost heap after every meal. Cover the bottom of the container with a few sheets of newspaper. This carbon-rich material not only assures clean smelling compost, but since kitchen scraps are high in nitrogen, this carbon-nitrogen mix creates the perfect environment for micro-organisms that create compost.

Companion Planting and Rotation

To provide a good environment for growing flowers and vegetables, select the correct plants as neighbors. The most popular plant protection technique is using one plant to deter the predators of a neighboring plant. Marigolds are most

effective on clearing the ground of various nematodes. Lambs quarters will attract leaf miners away from other plants. Garlic is a general insect repellent and especially deters Japanese beetles. Garlic bulbs scattered around the rose bushes provide a safe way to repel aphids. Tansy repels most



insects including ants, aphids and beetles. Marigolds and tomatoes are perfect companions as are summer squash and coneflowers, petunias and lettuce and tomatoes and squash. Herbs are also perfect companions. Basil planted near tomatoes repels insects. Chives near roses prevent blackspot.

Mint is a friend to tomatoes and cabbage. Nasturtium is beneficial to fruit trees, tomatoes, radishes, cabbage, broccoli and many other plants. Parsley planted around tomatoes will enhance flavor. Site rotation for vegetables is a strong deterrent to all insect pests and does not deplete the soil of nutrients over the years.

Fertilizers

Never use chemical fertilizers! They force-feed plants, depleting the soil of natural nutrients, and may pollute the groundwater. Gardeners are realizing the problems of chemical run-off getting into the drinking water and into freshwater streams and the ocean. The chemicals do not break down when passing through the soil and become a hazard to the natural environment. Organic fertilizers are becoming more available at garden centers. *Plant-Tone*, an Espoma product, is an excellent organic fertilizer available at most garden centers.

Pesticides

Use natural pesticides while gardening indoors and out to preserve the earth, the ocean and the water supply.

- All-purpose insect spray: Mix three tablespoons baking soda, two tablespoons Murphy's Oil soap, two tablespoons canola oil, two tablespoons vinegar and two gallons warm water. Apply with a hand sprayer.
- Fungus spray: Mix one-half cup molasses, one-half cup powdered milk, one teaspoon baking soda and one gallon water. Apply with hand sprayer.
- Powdery mildew spray: Mix four tablespoons baking soda, two tablespoons Murphy's Oil soap, one gallon water. Apply with hand sprayer.
- Slug spray: one and one-half cups ammonia, one tablespoon Murphy's Oil soap, one and one-half cups water. Spray where areas of slug activity are seen.
- White fly spray: Mix one cup sour milk (leave milk at room temperature for forty-eight hours), two tablespoons flour, one quart warm water. Apply with hand sprayer.
- Rose spray: Mix one gallon water, one tablespoon baking soda, one teaspoon oil. For aphids, add one-teaspoon instant tea granules, two cups water. Apply with hand sprayer.
- Organic spray for general use: In blender pulverize three large onions, one whole clove garlic, two tablespoons cayenne pepper and two cups water. Pour into a large container and add one-tablespoon liquid soap, one-half gallon water. Strain. Bury the pulp between rows of vegetables or plants and use the liquid in a hand sprayer.



Safe and Never Sorry

Savvy gardeners now have an all-purpose, safe and effective product available to control the pests that try to invade gardens and containers.

From the neem tree in India (*Azadirachta indica*) comes an extract that has been used for centuries. Leaves of the tree are used for analgesics and skin-soothing tinctures. Neem seed oil has antibacterial agents and the crushed seed is an excellent soil amendment. Neem oil is used to prevent or control plant diseases and pests. It biodegrades quickly and is non-toxic, making it safe to have around the home. When applied as a spray, insects on both edible and ornamental plants will lose their appetites, be unable to reproduce and will not mature. Neem oil is available as a concentrate or a ready-to-use spray. One precaution, always water plants well before using the neem oil spray to prevent burning the foliage.

Added information:

- Hydrogen peroxide inhibits the growth of disease. Blend sixteen drops of thirty-five percent hydrogen peroxide in one quart of water. Spray plants in the morning.
- When changing the water in the aquarium, use the old water on vegetable or garden plants, it is full of nutrients.
- Lavender oil rubbed into the skin is an insect repellent.
- Coffee grounds around roses add nutrients.
- Sprinkle dried blood around the plants. It nourishes and keeps animals away from the plants and bulbs.
- Geraniums will flower abundantly when fed once a month with one-tablespoon dry baking yeast dissolved in one-gallon warm water.
- Natural mosquito repellent: Mix two cups witch hazel, one and one-half teaspoons citronella and one

tablespoon apple cider vinegar. Apply to skin avoiding the eyes.

- Banana peel repellent: Place banana peels around roses or other plants plagued with aphids. Potassium in the peels stimulates larger blooms as an added bonus.
- Peppermint repels ants.
- Lemongrass repels wasps.
- Every time eggs are used, crush the shell, soak in water overnight and pour the water on plants to add calcium.
- Cayenne pepper sprinkled around plants keeps animals at bay.
- Aspirin keeps plants healthy. Dissolve one regular, uncoated aspirin in one-gallon water and dose the plants every two months.
- To attract bees to pollinate fruit trees, spray with a mixture of one-half cup honey dissolved in one quart of water and spray while trees are in bloom.
- When moving plants from outside to indoors, always spray for insects.

The perfect garden shows respect for the land, water and all resident creatures, including the gardener. Joy comes from starting a garden. The peace and serenity it offers are immeasurable! Tending plants teaches the true rhythm of life: that it cannot be forced, only nurtured. Be friends with the earth with gentleness, respect and love, and hope for a beautiful tomorrow!

Integrated Pest Management

Caring for the Environment

Planet Earth, our home, is indeed a fantastic, magnificent, beautiful, and abundant planet, but many of us take it for granted. It is amazing to see how the earth can heal itself after man has thrown millions of tons of pollution and poisons at it. One only has to look at the ocean water to realize how much purer and cleaner the water is today than it was ten years ago, before laws were enforced to stop ocean dumping. As earth's caretakers, we must use some common sense and do our best to reduce the use of toxins in the immediate environment. Gardeners and farmers are especially guilty of polluting the soil and waters with pesticides. With a little care and knowledge, significant reduction in the non-source (indirect) pollution of our bay and ocean can be made.

These pesticides can present serious health hazards; some are carcinogens, others attack the immune system, and almost all of them, when ingested in our food, are endocrine disrupters. These endocrine disrupters are especially dangerous. They attack the reproductive system. All toxic

pesticides are killers, but they are not specific enough, and will sicken and kill many other species.

This is an introduction to Integrated Pest Management (IPM) and organic programs. The difference between the two is very simple. In an IPM program, toxic pesticides in the garden can only be used as a last resort, when every alternative has failed. In an organic program no toxic chemicals are ever used. In the last twenty years or so, using an IPM program, some island gardeners have never had to use toxic chemicals because there was always an alternative. Often the alternative is more effective than the traditional toxic.

Plant health is very important when adopting IPM. Healthy plants are resistant to pests and diseases. Know the plants in the garden. Be familiar with simple plant culture: proper light and water, good soil, good drainage, proper fertilization, weed control, etc. Remove any infected plants, clean up under the plants, and add a clean layer of mulch to control weeds. It is easier to prevent weeds from germinating than to get rid of them. Put a three-inch mulch on the garden beds immediately after planting. Weeds can be prevented from growing in areas covered with stones by applying WOW, a non-toxic made from corn, in spring before anything germinates and once again, in August. This is a lot safer and better for the environment than Roundup.

Give the plants the conditions they need and they should thrive and be resistant to pests and diseases. Encourage birds, toads, bats and beneficial insects (lady beetles, praying mantis and lacewings, etc.). Location is everything. Be sure the sun lovers are in the sun, and the shade lovers are in the shade. Grow disease resistant varieties that are plentiful in garden markets. Roses, for example, that do not require any spraying, and bloom abundantly. Call the N. J. State Extension Service hotline for lists of disease resistant trees, shrubs or perennials (732-349-1245). All of this will help, but sooner or later the gardener runs into trouble. Here are a few tips. Inspect the

plants every other week. If an infestation is not too severe, handpicking the damage-causing insect will do the trick. Also, infected limbs of a tree or shrub may be pruned out. Remay, a cloth cover, may prevent problems with zucchini. A weekly washing with a hose often is helpful in preventing spider mites and aphids.

Know the enemy. Look for *A Field Guide to Insects* by Borror and White, and *Common Sense Pest Control* by Olkowski, Daar and Olkowski, to identify insects, and in some cases, offer controls. The *Gardens Alive* catalog (812-537-8650) offers IPM solutions to many pest problems. Many professional landscapers offer IPM service. When it comes to spraying, do it sparingly and only when pests are present in damaging numbers. Try these biorational (non-toxic to human) treatments: Safers soaps, Neem, and horticultural oils. Remember, always keep spraying to a minimum, because these sprays will kill beneficial insects as well as the targeted bad bugs. Check before spraying. Beneficial insects can be purchased from *Gardens Alive*.

Now is the “when all else has failed” stage, and the hotline says a traditional (toxic) pesticide is the only solution. Remember a few things: botanicals (Rotenone and Pyrethrum), although they are made from plants, are still toxic and must be handled as such. No routine spraying is allowed in the IPM program because it has been found to be ineffective. Again, spray only when insects are present in damaging numbers and spot treat only. Use every possible precaution: protective clothing, mask, etc. Read the label! Think before spraying anything. Maybe the insect involved has a short lifespan and will go away in a week or two. Give nature a chance.



Botanical Nomenclature

Loving Latin

Everyone knows more Botanical Latin than they realize. For example, all gardeners without a hesitation use the following proper genus names: Narcissus, Hydrangea, Delphinium, Chrysanthemum, Amaryllis, Anemone, Astilbe, Buddleia, Campanula and Clematis, etc.

Botanical names may be hard to pronounce, but perhaps some explanation about how the system works and why it has been important in identifying plants will be helpful. The botanical or scientific name consists of two or three words. The first word, always capitalized, is the genus name. This is a group marked by common characteristics or by one important characteristic. In a way the genus is similar to a person's last name. This word, genus, used in conjunction with a second word called the species make up the full scientific name. Take for example the perennial, cone flower, Echinacea purpurea where the first word describes the group and purpurea means purple. Sometimes the species is further divided into subspecies, varieties or cultivars. The species is generally an adjective and follows the rules of Latin grammar.

The ending must agree with the gender of the genus (masculine, feminine or neuter.)

Plants were first named in the sixteenth and seventeenth centuries when Latin was the common language. Carl Linnaeus, the Swedish naturalist, is the father of this naming system, which makes plant identification more specific and more accurate than the use of common names. Botanists of all nationalities still use this system today.

Listed below are some common species and it will be evident why these terms are helpful in describing a plant in more detail from that indicated by the genus:

<u>Species</u>	<u>Meaning</u>	<u>Species</u>	<u>Meaning</u>
albus/alba	white	arborea	tree-like
aurea	golden	bifolia	two-leaves
caerulea	sky blue	canadensis	of Canada
candida	pure white	cardinalis	scarlet
coccinea	bright, deep pink	compacta	compact
cristata	crested	elata	a taller species
elegans	graceful	erecta	upright
flava	pure yellow	floribunda	profuse flowering
foetidus	stinky	gigantea	a larger species
hybrida	hybrid	japonica	of Japan
latifolia	wide leaves	longifolia	long leaves
marginata	leaf edges colored	niger	black
odorata	fragrant	officinalis	medicinal
pendula	hanging down	plena	double
purpurea	purple	rosea	pink
rubra	red	sinensis	of China
speciosa	showy	variegata	marked with color
viridis	green	vulgaris	common, ordinary

Common names are often misleading. Take, for example, the hardy shrub, "Rose of Sharon." This plant is not in the "rose" genus, Rosa but in the genus, Hibiscus. One would never know that from the common name. The botanical or scientific names are dependable everywhere, while common names can refer to one plant in some areas and other very different plants elsewhere. The common names myrtle, laurel, bluebell and daisy can lead to misunderstanding. Geranium is a genus name applied to perennial geraniums, but the common name, "geranium," given to the annual plant, falls in the genus Pelargonium.

As with any rules there are always exceptions. These basics should help the gardener understand why botanical names are the names favored over common names as well as how to write the scientific names properly.





Season's End

Closing Down the Garden

Long Beach Island is a place of seemingly endless summer. Just as the ocean keeps us cool in the spring and summer, the warm currents prolong our autumn. With this in mind, remember the chill of the spring air and make the most of the beautiful autumn days.

Gardens need a thorough clean up, which can be done during these pleasant fall days. Disease organisms and pests lurk in dead stalks and leaves. Dispose of healthy materials in the compost. (See chapter on compost for acceptable materials.) Pull up weeds so they don't produce seedlings next year. Some gardeners suggest building a brush pile to provide shelter and food for birds during the winter. Locate this in an isolated spot in case critters move into it.

Divide and plant perennials in time for them to establish new root systems before the cold of the winter arrives. Keep them well watered until the ground freezes. Tender plants such as dahlia, gladiolus and cannas need to be dug up after frost has killed the foliage. Dig the bulbs or rhizomes and let

them sit in the sun to dry out for a day. Clean them off and store at 40 to 50 degrees Fahrenheit.

Allow some favorite annuals to go to seed. Collect the seeds when ripe and keep them until spring in a dry, cool area. Larkspur and hollyhock seeds may be planted in early fall. The resulting husky little plants will winter well. Delphinium, cornflower and cosmos seeds can also be planted then.

Dig and till beds so that they'll be ready for spring planting. Apply slow-releasing fertilizer and soil conditioners. This is the time to take a soil sample and have it analyzed (see agricultural extension service number). The proper amendments can then be added next year.

This is the time for garden records to be updated. When closing down the garden, lay out the garden on paper so that changes can be planned during the winter. Take pictures!

Pruning is not advised in the fall, but should be resisted until spring. Tall rose stalks can be removed or tied down to prevent wind/ice damage. Buddleia (butterfly bush) will continue to produce leaves and these are necessary for spring growth. It may not survive if pruned.

The purpose of winter protection (mulching) is to keep plants cold. Changes in temperature cause the ground to heave breaking off tiny roots. This is the major reason for "winter kill." Protection should be applied only after the ground is frozen, usually in January. The covering should be light, airy and dry. Leaves are a bad choice for mulch. Cut up boughs from Christmas trees, eelgrass and corn stalks are good choices.

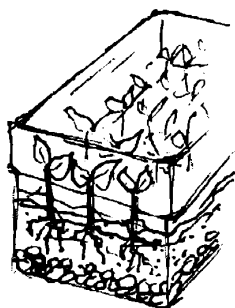
People who live the year round with windy conditions find the winters to be especially difficult. It is very important to continue watering plantings all through the fall months. A blanket of snow is the greatest gift of all. In case that is not likely, a deep soaking late in the fall will make some moisture available to the plants in the spring when they begin active growth once again.

Gardening Month-by-Month

JANUARY

Light a fire with a good idea

Project – Propagate Plants in a Miniature Greenhouse



1. Buy a clear plastic box with a lid.
2. Put a layer of pebbles in the bottom.
3. Add several inches of damp, soilless potting mix.
4. Take three-inch cuttings from choice plants. (Propagate begonias, fuchsias and geraniums this way.)
5. Remove bottom leaves from stem and stick the ends in soil. A rooting hormone may be used.
6. Cover greenhouse and keep in warm place.

7. Water sparingly (add only when there is no condensation).
8. Roots will form and new plant can go in the ground when weather permits.

Planning Ahead

1. Start a gardening notebook.
2. Make diagrams and sketches of flowers and vegetable beds.
3. Show placement and identification of plants.
4. Allow pages for notes on successes and failures.
5. Work on new plan—keep in mind the last frost date on LBI is earlier than inland (May 20 is fairly safe) because of the moderating effect of the ocean.
6. Make a chart of everything expected to be planted with columns for indoor and outdoor planting times as given on the seed packets.
 - a. Allow for rotation of tomatoes, eggplant, peppers and potatoes with legumes or other crops. Be sure to buy disease-resistant varieties.
7. Get estimates for improvements—note the areas of wind damage, poor growth, other problems.
8. Start collecting catalogs and books. The seed catalogs are a wealth of information. Throw out previous years. Check leftover seeds.
9. When making a garden plan—place the seed orders.
10. Clean crusty clay pots. Add one cup each of white vinegar and household bleach to a gallon of water and soak the pots. This might take as long as twelve hours and steel wool scrubbing.
11. If leftover seeds have been saved, check their viability by germinating some on a piece of damp paper towel. If fewer than ninety percent germinate, discard.

Weather and Soil

1. Cut off Christmas tree branches to use as mulch on flowerbeds.
2. Do not mulch until the ground has had a deep freeze.
3. Avoid walking on frozen lawn and garden areas.

Flowers

1. Save wood ashes (good for peonies, roses, iris, pansies and clematis).
2. Check stored tubers and corms—if signs of rot, dust with sulphur.
3. Fertilize houseplants.
4. Force bulbs. See this topic in “Bulbs, etc.” (When weather permits, dig up first set of bulbs from cold frame and bring inside.)
5. Propagate/sow seeds of slow-growing annuals (begonias, fuchsias and geraniums).

Trees and Shrubs

1. Prune evergreens, trees and late-flowering shrubs on mild days.
2. Reduce desiccation from sun and wind by applying an anti-transpirant when the temperature is above freezing.
3. Take cuttings of holly. Root them in a mixture of sand and peat and place in a cool, well-lighted location. A heat cable will speed rooting.

FEBRUARY

Time for the housebound gardener grows shorter



Project – Forcing Flowering Branches

1. Cut branches suitable for forcing (flowering shrubs, pussy willow, andromeda, leucothoe, magnolia).
2. For better water absorption, crush stems then put in pail of water and leave in the dark until buds begin to swell.
3. Bring into daylight.

Planning Ahead

1. Clean, sharpen and oil garden tools.
2. Repaint window boxes and garden furniture.
3. Order seeds now.
4. If ordering vegetable seeds for cool weather crops, i.e., lettuce and spinach, order enough to carry through a fall planting

Weather and Soil

1. Cover compost pile with black plastic to speed up the activity and check for correct balance of moisture.
2. Fertilize beds with bone meal when weather is mild.

Flowers and Vegetables

1. Check perennials for heaving and press back into soil. Add mulch if necessary.
2. Look for first snowdrops, winter aconite and hellebores.

3. Get out seeding flats and buy soilless mix. Seed sowing indoors can begin toward the latter part of this month. (Stick to the calendar guidelines on the seed packets.)
4. **READ ALL INSTRUCTIONS ON THE SEED PACKETS AND FOLLOW THEM!!**
 - a. Thin seedlings when one-inch tall to one-inch apart and fertilize monthly.
 - b. Trim the tops and roots before transplanting.
 - c. All seedling containers must be disease-free to avoid “damping-off” disease. They should be soaked overnight in a solution of one part bleach to ten parts water and rinsed thoroughly before use.
 - d. Cover seeds with a thin layer of moistened sphagnum moss (not soil mix) to inhibit disease.

Trees and Shrubs

1. Desiccation is severe now so spray broad-leaved evergreens and boxwood with Wiltproof.
2. Prune fruit trees and ornamentals (exclude birch, dogwood and magnolia). Do not prune spring bloomers. Pruners should be sterilized between cuts—solution of one-tablespoon bleach to one quart of water to prevent the spread of disease.

Lawns

1. Time for lime. Apply slow-release fertilizer one week later (if not done in fall).
2. Seed the bare spots.

MARCH

Open your arms but go cautiously!

Project – Encourage Birds to Nest in the Garden



1. Put out simple birdhouses—birds eat lots of harmful insects.
2. Preserve and foster occasional clumps of twiggy shrubs—save undergrowth.
3. Set out a birdbath and keep it supplied with clean drinking water.
4. Remember that birdhouses need annual cleaning and a rinse with one part bleach to nine parts water.

Project – Build a Cold Frame

1. Use discarded storm sash and four old boards.
3. Can be made from concrete blocks and four old boards.

Planning Ahead

1. Order dahlias and other summer-blooming bulbs as well as perennial plants, chrysanthemums and hardy asters.
2. Attend as many flower shows as possible and go equipped with camera, notebook and pencil.
3. Lay out a chart of the seed planting schedule as given on seed packets. Separate seeds “start indoors/outdoors.”

4. Finalize the garden plan and calculate spatial allotments. Keep this plan in a convenient place for note taking and comments.
5. Start saving gallon plastic jugs. Cut off the tops and use as covers for transplanted seedlings.

Weather and Soil

1. Cultivate soil in cold frame and keep closed to warm up the soil.
2. The following seeds germinate in the cold soil of early spring—peas, lettuce, mustard greens, arugula and spinach.
3. It is time for a soil test. Vegetable plants grow best in soil of pH 6.5 to 6.8. (Buy a soil test kit at a garden supply place and follow the instructions.) This will avoid wasting fertilizer.
4. Avoid compacting wet soil. Do not do a lot of digging when it is wet.
5. Soil can be safely worked when a handful is squeezed into a ball and crumbles easily when pressed.

Outside Maintenance

1. Gather up fallen branches, twigs and other debris
2. Finish raking leaves
3. Begin removing winter mulch from perennials.

Flowers and Vegetables

1. Apply high-phosphorous fertilizer and soil amendments (compost, manure) to flowerbeds.
2. Photograph perennial gardens to see what areas might need bulbs in the fall.
3. By St. Patrick's Day, plant peas. They do better if grown on supports. Three-foot chicken wire anchored with four-foot stakes (wood or metal) will work.

4. At the beginning of the month lettuce can be sown in flats indoors and transplanted outdoors at the end of the month. When the soil is dry enough, additional seeds can be planted outside.
5. Outdoors, sow larkspur, calendula and sweet peas.
6. Indoors, sow seeds that need eight weeks to develop before planting outside—ageratum, alyssum, asters, dianthus, lobelia, nicotiana, petunia, snapdragon, verbena and cornflowers.
7. Start tomato seeds indoors now. Cover and keep warm until they germinate. Same for peppers and eggplant.
8. Sow cabbage and broccoli seeds indoors now and transplant outdoors in mid-April.
9. Fertilize bulbs with bulb fertilizer or bone meal as they emerge from the soil.
10. Check daylilies, Siberian iris, hostas and similar perennials to see if any growth has appeared. If so, they can be transplanted or divided now.

Trees and Shrubs

1. Apply dormant oil spray to trees and shrubs to smother egg masses of scale, aphids and mites when temperature is above 40 degrees.
2. Finish pruning fruit trees and shrubs. Prune any dead or damaged wood to just above leaf buds.
3. Excellent time to plant shrubs and trees if soil is dry enough. Move spring-blooming shrubs after they bloom.
4. Late March is a good time to fertilize evergreens.
5. Fertilize trees and shrubs with a 5-10-5 fertilizer.

Grasses

1. Cut back the remains of any perennial and ornamental grasses before new growth begins.

APRIL

What Comes Up Must First Go Down

Project – Making a Hanging Basket



1. Purchase a wire or plastic basket and line with sphagnum moss or sheet moss soaked overnight.
2. Squeeze out excess moisture and pack a thin layer around the inside of the basket.
3. Add damp potting soil.
4. Place plants where wanted (different species of sedum work well).
5. Fill with more soil to within one and one-half inches of the top.
6. Cover the soil with more moss or river stones.
7. Fertilize every two weeks and keep thoroughly watered.
8. Other plant suggestions: Sun—geraniums, nasturtiums, petunias; shade—fuchsia, fern, ivy; partial sun—begonias and verbena.

Water and Soil

1. Time for a thorough garden clean up.
2. Fertilize all beds with slow-release or organic (slow to break down) fertilizer: Peat moss, composted manure, mushroom soil, eggshells and ashes.
3. Open cold frame on warm days.
4. Building the structure of soil is an ongoing task.

Flowers

1. Fertilize roses and peonies with a handful of bone meal per plant. High in phosphorus.
2. Fertilize the bulbs with bone meal after blooming.
3. Amend beds with bone meal, wood ashes and compost.
4. Cultivate flowerbeds one to two inches.
5. Plant clematis, perennials and dahlias after April 15.
6. If moving roses, transplant bushes now.
7. Divide large clumps of summer or fall-blooming perennials, but do not disturb spring bloomers (bleeding heart and coral bell). Divide these in late summer or fall.
8. Outside, sow seeds of hardy annuals (aster, cosmos, annual poppy and portulaca).
9. Apply mulch after plants emerge—keep it away from stems.
10. Blooms to expect: daffodil, early tulips, grape hyacinth, lily of the valley, candytuft, pansy, border phlox, columbine, ginger, marsh marigold, pachysandra, pulmonaria, rock cress, vinca, violet, wall-flower, forget-me-not, azalea and spice viburnum.
11. Annuals like zinnias and petunias are good to fill in bare spots left by spring bulbs.

Vegetables

1. Plant cool-weather vegetables like arugula, kale, peas, spinach and lettuce at intervals outside.
2. Plant parsley, chives, onions, beets and carrots in the garden.
3. If vegetables and/or flowers have been started indoors, they must be hardened off before setting outside. A cold frame or a protected area where they can be shielded with a plastic cover at night is fine.

Trees and Shrubs

1. Plant deciduous trees, evergreens and shrubs—especially summer blooming. Before planting, soak bare-rooted trees in water overnight. Plant in well-prepared soil. A ‘balled’ plant keeps the natural burlap around the roots but the twine around the stem must be removed. If the burlap is a plastic material discard it.
2. Fertilize evergreens, hollies, azalea and rhododendron with Holly Tone.
3. Prune early flowering shrubs when finished blooming.
4. Set an artificial barrier between hedge and neighboring plants to prevent competition for plant nutrients—six to eight inches of metal edging.

Lawn

1. Sow seed in bare spots no later than April 15.
2. Mow when it grows at least two inches. Maintain a two-inch height.

Plant Health Care

1. Plant health focuses on key plants in the garden. Key plants are those that scientists have determined to have the most pest problems.
2. Key plants should be monitored every three weeks during the spring and early summer to look for pest problems.

General Information

1. When planting container-grown plants, pull apart roots before putting them into the planting hole. This encourages new root growth.
2. Old pantyhose have lots of garden uses. Cut into strips

for tying stakes to plants. Use pieces in bottom of pots instead of terra cotta pieces.

3. Keep an eye on the frost date for the area. May 20th has been safe on Long Beach Island in past years.
4. Excess seeds will germinate better at a future time if stored in a cool area with low moisture. Place two tablespoons of powdered milk in four tissues and secure with a rubber band. Put the packet in a wide-mouthed canning jar with the seeds and seal the jar tightly. Place the jar in the refrigerator. Replace the powdered milk once or twice a year.
5. After planting seedlings, surround each one with a small collar (one- to two-inches deep) to deter cutworms—discarded paper cups with bottoms removed or toilet tissue tubes are fine.
6. If mail-order perennials arrive, remove the dry packing material and soak the roots in water before planting.

MAY

Make This Month Count!

Project – Create Outdoors Planters



1. Take a look at the possible containers that would enhance the deck or patio. Troughs, strawberry jars, interesting barrels or pots can be adapted.
2. Determining amounts of sun or shade must dictate plant selection.

3. Sun-loving plants include cacti, sedums, Boston daisies or geraniums.
4. For shade, begonias or impatiens.
5. A layer of pebbles on the bottom of the container is necessary for drainage. The planter must have drainage holes.
6. Fill with potting soil amended with a time-release fertilizer and wet sphagnum moss to retain moisture.
7. Water often and feed every two weeks.

Planning Ahead

1. Plan time to sit down and enjoy spring.

Weather and Soil

1. Watch for garden pests that come with warm weather.
2. Develop a regular feeding program.

Flowers

1. Plant seeds of tender annuals after May 15.
2. Mix all leftover annual seeds and sow in one area to make a cutting bed.
3. Choose a cloudy day and put in bedding plants and plant window boxes.
4. Plant gladiola corms and dahlias.
5. When cutting peonies, cut only the blooms and leave the foliage to strengthen the plant—ants on the buds are good, devouring aphids.
6. Plant sunflowers along a fence—when tall; tie up with strips of old pantyhose.
7. Divide fall asters and German iris after blooming. Make cuttings of chrysanthemums.
8. Pinch back chrysanthemums.
9. Plant potted Easter lilies in a sunny, well-drained spot.

Vegetables

1. Plant seeds of tender vegetables.
2. Plant beans every two weeks.
3. Choose a cloudy day and set out plants like tomatoes and peppers, but do not plant eggplant until the end of the month.

Trees and Shrubs

1. Note that evergreens are shedding old leaves and needles now. This includes holly, taxus, laurel and rhododendron.
2. If planting, create a saucer out of soil around each tree or shrub. This will help hold moisture.
3. Complete pruning of spring flowering shrubs.

Lawn

1. Hand pull any scattered weeds.
2. Fertilize the lawn now.

Planting and Special Care

1. Seedlings will suffer less shock in transplanting if there are good conditions for new root development. Do not transplant in full sun. If the next day is sunny, shield new plantings with bushel baskets or pots.
2. Water seedlings with a diluted (one-quarter strength) fertilizer solution after planting.
3. Into the soil at the base of the planting hole, mix several teaspoons of granular fertilizer. Tomatoes and roses like a teaspoon of Epsom salts.
4. Plant tomato plants deeply or lay on their sides with only the tops sticking up. Remove leaves on stem before planting.

5. Cucumbers and melons like warm soil. A black plastic cover on the soil helps—cut slit through which to poke the plants.
6. Plant stakes right along with the tomatoes to avoid their flopping all over.
7. Bring amaryllis outside—keep watering and fertilizing.
8. After planting, pinch back coleus, verbenas, impatiens and begonias.
9. Continue to deadhead pansies and remove faded blooms from spring bulbs and peonies. Allow stems and leaves to die back naturally.
10. When seedlings and tender plants are exposed to the garden and the whipping winds of Long Beach Island, it is critical that the gardener provide protective wind barriers so that young plants are not shredded.
11. Plan on installing a drip irrigation system.

JUNE

Let the Insects Begin – Both Good and Bad!

Project – Brighten up a Dull Place



1. Grow a pretty vine like morning glory or red honeysuckle on a trellis beside the garage.
2. Morning glory seeds must be soaked in lukewarm water overnight to assure germination.
3. When the seedlings start to climb, tie to the support with small pieces of pantyhose.

Planning Ahead

1. Add grass clippings to compost.
2. Order fall bulbs.
3. Check flower and vegetable beds for protection from heavy winds.

Weather and Soil

1. Lay out a drip irrigation system to prevent garden damage in case of prolonged drought conditions.
2. Mulch well (three inches) after a good rain to kill weeds, conserve moisture and soften the soil surface. Keep mulch away from stems of plants. Acceptable mulch material is porous, non-absorbent, springy, rot resistant, clean (no weed seeds) and light (easy to distribute). The best is salt marsh hay.

Flowers

1. Complete planting of all annuals early this month and fertilize with a good organic fertilizer like "Plant Tone." Plant biennial seeds (i.e., foxglove, bell flower and hollyhock).
2. Sow seeds of perennials through August and shade until the leaves appear.
3. Pinch back annuals and chrysanthemums to make sturdy plants.
4. Deadhead spent flowers every day to encourage flowering.
5. Cut flowers for the house in the early morning and harden stems in deep water before arranging.
6. Dig and divide spring perennials after flowering. Use abundant grouping of the new divisions. Keep a bag of vermiculite or perlite handy for transplanting—add a trowelful to the bottom of the planting hole and soak

with water before setting in the transplant. Transplant on a cloudy day or late in the day.

7. Lilacs—Remove spent blooms and apply lime and fertilizer.
8. Remove brown foliage from spring flowering bulbs. Divide and replant overcrowded daffodils.
9. Move houseplants outside to a protected location. Fertilize regularly with quarter strength solution.
10. Check container plants often during hot, windy weather—they need lots of water.

Vegetables

1. Pinch off suckers and excess leaves from tomato plants leaving two main stems on each plant. Make sure plants are staked and well mulched.
2. Plant heat-resistant lettuce and spinach in shady areas.
3. Plant bush beans every two weeks until late July.
4. Now is the time to harvest fresh peas and lots of lettuce.

Trees and Shrubs

1. Fertilize broad-leaved evergreens after bloom. Remove spent flowers.
2. Work on yews, junipers, Japanese hollies and other hedge plants. Prune and keep narrower on top so lower foliage gets light.
3. It is time to make softwood cuttings of deciduous shrubs like forsythia, viburnum and lilac.

Deter Destructive Insects

1. Plant herbs throughout the garden; they deter unwanted insects and are decorative.
2. There are beneficial insects out there—lacewings and

- ladybugs eat aphids as do hover flies.
3. An excellent seashore plant that attracts ladybugs and green lacewings is goldenrod (Solidago spp.).
 4. Coreopsis, candytuft and morning glory attract hover flies whose immature maggots eat scale insects, aphids and leafhoppers.
 5. Geranium flowers are often victims of the larvae of the plume moth (a yellow-green caterpillar). Handpick and spray with Bacillus thuringiensis.
 6. Handpick Japanese beetles and drown in soapy water.

Seaside Gardening

1. Plants for a windbreak include:
 - a. Grasses – Sea oats, seaside panicum, American beach grass, false beach heather and bearberry. The tangle of roots holds moisture and keeps soil in place.
 - b. Trees – Juniper, Japanese black pine, autumn olive, Australian pine and American holly.
 - c. Shrubs – Rugosa rose, California privet, Scotch broom, inkberry (Ilex), shadbush, sweet pepperbush and hydrangea.
2. After a windbreak is established: Dusty miller, goldenrod, chrysanthemum, beach pea, beach plum, blanket flower, sedum, sea pink and statice.

JULY

Vacations yield weeds!

Project – Topiary outside for summer and indoors later.



1. Materials – A pot, potting soil, wire frame (circle, spiral, etc.)
2. Plants that work include ivies (shade-loving), rosemary, jasmine, and ficus.
3. Anchor plants firmly in pot and tie plants to frame with soft ribbon.

Planning Ahead

1. Evaluate the garden – take notes.
2. Mark the places where bulbs are planted
3. Watch for overcrowding of shrubs
4. Does the watering system soak the roots?

Weather and Soil

Moisture loss is a big concern during summer heat: wilt means stress and a check in growth. Ways to prevent loss of moisture include providing shade from noon to mid afternoon, sprinkling foliage with water, using mulch and amendments to keep the ground cool and maintain soil moisture. If rainfall is less than 1 inch/week, water deeply in early morning.

Flowers

1. Weed, water and mulch
2. Apply mid season boost of fertilizer like Plant-Tone.
3. Deadhead all spent flowers to encourage more blooms.

4. Pinch back chrysanthemums until July 15.
5. Trim pine, spruce and fir shrubs and trees for compactness. No later than August!
6. Divide bearded iris now until mid August.
7. Divide oriental poppies.
8. Sow pansy seeds for next spring flowering.
9. Cut back spent delphinium stalks and fertilize plants to encourage another blooming.

Vegetables

1. Fertilize with an organic fertilizer like Plant-Tone. Read the directions!
2. Harvest zucchini when it is 6-8 inches long. Sow another batch.
3. Keep tomatoes to 2 stalks and maintain stakes.
4. If tomatoes develop blossom-end rot, side dress with hydrated lime.
5. Sow new batches of cucumber, lettuce, radish and beets.
6. Trap snails and slugs by placing jar lids filled with beer throughout the garden.

Trees and Shrubs

1. Inspect holly, birch, azalea and rhododendron for scale and leaf miner.
2. Sheer hedges of privet, yew and hemlock.
3. Fertilize roses and shrubs for the last time this year and side dress with triple super-phosphate.
4. Flowering shrubs are setting buds for next year – Do not dig up or transplant now.
5. Remove suckers from the base of trees.
6. Planting can continue through hot weather if the whole root mass is pre-soaked 24 hours ahead of transplanting. Plant in late afternoon. Fog the foliage daily for a week and water the new plants with a diluted liquid fertilizer.

7. Plant basil for wonderful pesto.
8. Keep the camera active – take pictures of successes and disappointments.

AUGUST

Dog Days Mean Catnaps

Project – Make Gardeners' Tea

1. Materials: Large bucket or 8-gallon tub, water, burlap bag, 2 pounds of manure.
2. Pour the manure into burlap bag and tie the top.
3. Put the bag in the tub and fill the tub with water.
4. Steep the mixture for about 10 days or until the solution is the color of strong coffee.
5. To use in the garden, containers or window boxes, dilute by adding 2 parts water to 1 part gardeners' tea.



Planning Ahead

1. Order fertilizers and peat for fall planting.

Weather and Soil

1. Keep the compost heap going with grass clippings and garden refuse.
2. Because of disease, do not compost peony, delphinium or holly hock leaves.
3. Always water early in the morning.

Flowers

1. Tie flowering vines
2. As plants finish flowering, drop in oriental lilies and dahlias
3. Plant fall blooming annuals.
4. Remove seed heads from phlox to prevent self-seeding; offspring not attractive.
5. Sow last of perennial seed.
6. Divide Virginia bluebells.
7. Fertilize chrysanthemums as well as window boxes and planters
8. Plant oriental poppies as well as Japanese and Siberian iris.
9. End of month repot houseplants but do not use garden soil.

Vegetables

1. Peak of tomato season – Enjoy
2. Dig potatoes as soon as the tops have died down.
3. Plant more lettuce, beans, spinach, and brussel sprouts for fall harvest.
4. Set out seedlings of cabbage, cauliflower and broccoli.

Trees and Shrubs

1. Stop fertilizing and pruning roses and evergreens.
2. Time to plant and transplant evergreens.

Miscellaneous

1. Clean water in birdbath.

SEPTEMBER

From Dog Days to Autumn's Explosion

Project – Plant a Tree

1. Check the chapter on Trees and Shrubs and select what's suitable for the zone and belt.



2. Dig a hole two to three times the width and the depth of the root ball.
3. Cover the bottom of the hole with compost, fertilizer, topsoil and water.
4. Set the tree in the hole at the same depth as it was in the nursery. If this is a balled

and burlapped tree, loosen the burlap around the trunk but don't remove it.

5. Keep adding soil and soaking with water until the tree settles in and press soil firmly.

Planning Ahead

1. Dry seed for next year's planting. Pick the best blossoms after the seeds have set. Dry a day or so, tie up and hang in a dry place
2. Collect nuts, seed pods and pine cones for decorations.
3. Plant mums, pansies and ornamental kale for fall color.
4. Start new lawn now to be well established by next spring.

Weather and Soil

1. Water, water, water – especially evergreens, new lawn, transplanted perennial seedlings
2. Prepare new garden areas for fall planting of roses, bulbs, perennials and shrubs.
3. Seed and feed bare spots in lawn.
4. Water trees and shrubs during dry periods until the ground freezes.
5. Work toward the best soil possible. Send soil samples to the local extension service. pH and nutrients are important to what is grown. Amend with compost, and good organics.

Flowers

1. Divide and plant peonies, hosta, daylilies, lilies-of-the-valley, violets, phlox, beebalm and yarrow. Don't divide summer flowering perennials until spring.
2. Cut back perennials to about 4 inches as they die back
3. Move spring blooming perennials; those that bloomed before June 1.
4. Transplant perennial seedlings to well prepared beds.
5. Continue to clear away pest and disease harboring plant material.
6. Leave healthy seed heads for the birds to enjoy – coneflower especially.
7. Take cuttings from favorite geraniums to bring indoors for the winter.
8. End of month check house plants for pests and bring indoors.
9. Lift tender bulbs (canna, dahlia, gladiolus), Dry out before storing
10. Plant spring flowering bulbs.
11. Sow cornflowers, larkspur, sweet alyssum and California poppies outside for early spring bloom.

Vegetables

1. Not likely to have an early frost on LBI but watch weather reports carefully and have covers handy for tomatoes, peppers and eggplant.
2. Leave winter squash until the skin is hard.
3. Carrots, parsnips, leeks and beets will taste better after a hard frost.
4. Plant some spinach and lettuce in the cold frame.
5. Harvest green tomatoes, wash in a weak bleach solution (1 to 10) and wrap in newspaper. Store to ripen.

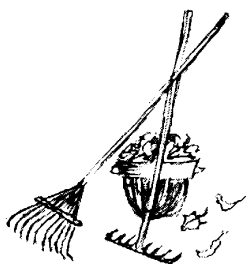
Trees and Shrubs

1. Transplant or set out evergreens, deciduous shrubs and trees after a good rain. Do not move oaks, dogwood, magnolia, peach, cherry or plum until early spring. Best to transplant deciduous trees and shrubs shortly after the leaves fall, as this allows root development before the ground freezes.
2. Give hedges their last major shearing
3. Prune Hydrangea after blooming. (See chapter on Trees and Shrubs)
4. Don't prune hollies now; wait until March.
5. Plants that were dug and burlapped last spring in a nursery have compact balls and are suitable for fall planting.

OCTOBER

Reward spring gardening with a good fall cleanup

Project – Put the gardens to bed



1. Build a compost pile with healthy but spent garden debris. Dig up finished annuals (roots too), vegetable plants and add any healthy foliage. As the pile builds, sprinkle in lime and soil. The soil hastens decomposition.
2. Turn over soil to make new beds so the sod can break down over the winter.
3. Pull all weeds so they do not mature and spread new seed. Weeds harbor pests and disease so put them and other diseased plant material in the trash.
4. Fertilize and cultivate all beds by spreading manure, super phosphate, bone meal and compost. Then dig it in.
5. Water evergreens well before winter.
6. Don't cut back perennials until a hard frost blackens the foliage.
7. Resist covering beds with mulch until there has been a hard frost.
8. Last time to fertilize houseplants before bringing indoors and check well for pests before bringing in the house.

Planning Ahead

1. Clean and store garden stakes.
2. Sow a row of spinach for an early spring crop
3. Bring in hoses, watering cans and rain gauges.

Weather and Soil

1. Plants will need some supplemental water until after the second hard frost.
2. Coastal soil temperatures stay warm longer than inland soil temperatures
3. Keep feeding the soil with good organically derived fertilizers and compost.

Flowers

1. Continue to plant spring flowering bulbs like daffodils and early tulips as well as lily bulbs. The lilies need good drainage. Include bone meal in the planting holes.
2. Dig up tender bulbs and store in sand in a cool, dry place. Wait until after frost to dig up dahlias.
3. Plant mums, pansies, and ornamental cabbage/kale for fall color.
4. Pot up bulbs and settle them in winter storage for indoor forcing. Pot Amaryllis for Christmas bloom.
5. Leave seed heads on coneflowers, sedums and other sturdy perennials for the birds.
6. After mid-October, no more rose pruning.
7. Leave heads on ornamental grasses to provide winter interest.

Vegetables

1. Harvest carrots, beets, green beans, lettuce and leeks.
2. If frost threatens, pick the tomatoes, rinse in a 1 to 10 solution of bleach and wrap each in newspaper. They will gradually ripen.

Trees and Shrubs

1. Water all evergreens before winter comes.
2. Fertilize evergreens.
3. Prune diseased and dead branches from trees and shrubs before leaves fall.
4. Plant shrubs and trees, mulch and water well.
5. Because of the windy, drying coastal conditions, spray evergreens with an anti-desiccant like "Wilt-pruf." If the garden is in the appropriate belt, plant lilacs late this month.

Lawn

1. Keep the lawn free of falling leaves.
2. Keep new grass moist.

Seasonal

1. Don't forget a happy jack o' lantern for the front steps!
2. Collect gourds of different shapes and spray paint them with clear varnish.

NOVEMBER

Finish those chores for a new season is coming

Project – A Winter Window Box for the Birds

1. Empty the summer's window box.
2. Cut branches from evergreens – junipers, cedars, firs and pines.
3. Add berried branches (cardinals love holly berries.), dried grasses and wheat stalks – Provide color for the eyes and food for the birds.
4. Stick cranberries on the ends of the branches.



Planning Ahead

1. Turn off and drain outside water faucets.
2. Gather mulch in preparation for the first hard freeze.
3. Buy paper-white narcissi for Christmas bloom.
4. Check tools before winter, wiping blades with a solvent to remove sap. Wipe with oil to keep rust free.
5. Drain gasoline from gas-powered equipment.

Weather and Soil

1. Turn compost pile before it freezes. Add fertilizer and water.
2. Add lime to the garden and lawn now.

3. Fertilize when plants are dormant so food is available for spring growth.

Flowers

1. Never add leaves of delphinium, peonies or phlox to the compost: toss them into the garbage.
2. Continue planting lilies and tulips. Plant cornflower, larkspur and poppy seeds now. Put in I.D. markers.
3. After chrysanthemums have finished blooming, cut down the stalks.
4. After hard freeze, mulch the perennial bed and rose bush canes at least six inches.
5. Remove summer bulbs (corms such as caladiums, cannas and gladioli). Store in a cool dry place over the winter.
6. Daffodil bulbs should be in the ground by now.

Trees and Shrubs

1. If the hydrangeas are exposed to harsh winter winds, wrap in a cocoon of burlap to protect the buds from damage.
2. If not done in October, apply antidesiccant to evergreens like hollies and pines.
3. Soak the ground around evergreens and shrubs before the ground freezes to prevent windburn.
4. Most bare-rooted or balled deciduous trees and shrubs can be planted now.
5. Stake new trees planted in exposed areas.
6. Hardwood cuttings of trees and shrubs can still be made.
7. Remove suckers from lilacs.
8. Prune water sprouts (skinny, upright branches) from small trees and large shrubs.

DECEMBER

**The garden pulse slows but keep the blood moving
in head and feet**

Project – Make a Wreath for the Doorway

1. Buy a wire frame and a spool of thin, green wire.
2. Cut lots of greens: white pine, spruce, taxus, juniper and cedar. Clip in five- to six-inch lengths.
3. Make equal bunches of greens, and with them facing the same direction, wind each firmly to the frame.
4. Trim with a big bow and any other objects of the season: pine cones, holly, fruit, nuts or wrapped candy canes.



Planning Ahead

1. Straighten up the potting area and re-stock supplies: potting soil, plant food and pebbles.
2. Take inventory of tools and check catalogs for replacements if necessary. Ratchet clippers and loppers ease work. Examine garden gloves.
3. Bind up upright evergreens with cord to prevent spreading and breaking with the weight of snow.
4. Have the lawn mower sharpened and in good running order to prepare for spring.
5. Pre-dig a hole for the Christmas tree if planning to plant a balled and burlapped tree outside after Christmas. Put fill dirt in an area where it will not freeze and fill hole with loose mulch.

Weather and Soil

1. Don't use salt to melt ice on masonry because it causes cement to disintegrate. Instead, use sand, sawdust, ashes or kitty litter.
2. Remove any leaves remaining on lawn or perennial bed to the compost.
3. Cover compost with black plastic to increase decomposition.

Flowers

1. After soil freezes, finish mulching perennials and roses. Use evergreen branches to hold the mulch in place and help keep the ground frozen in case of a thaw.
2. Start paper whites in pebbles and water and place in a cool, dark spot.

Trees and Shrubs

1. If trimming evergreens for use as decorations, use sharp shears and keep all cuts just above a node. This avoids unsightly stubs.
2. Prevent sunscald by wrapping with tree wrap or burlap.
3. Fine-tune the spring ordering list for evergreens, flowering shrubs and trees.
4. Shrubs like winterberry hollies (*Ilex verticillata*) and fall-blooming witch hazels (*Hamamelis virginianum*) keep the garden colorful during the winter months.

Birds

1. Continue to feed birds.
2. Add glycerin to birdbath to keep water from freezing.

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Toms River, NJ 08753
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